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[54] **SYSTEM FOR SELECTIVE
COMMUNICATION CONNECTION BASED
ON TRANSACTION PRICING SIGNALS**

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[52] **U.S. Cl.** 705/37; 705/34; 379/114

[58] **Field of Search** 364/401, 402,
364/406; 379/111, 112, 114, 115, 120; 370/17;
395/201, 210, 235, 234, 230, 237; 705/1,
10, 35, 34, 30, 37

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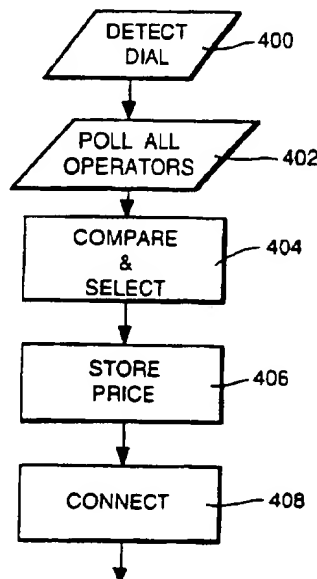
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[57] **ABSTRACT**

A communications network in which user equipment is provided with a selecting device which communicates with a pricing device in service provider equipment. When communications or other services are required, the selection circuit polls a plurality of service providers, and the pricing circuit of each service provider generates a price signal indicating the level of price for its services. The selection circuit then selects a service provider, based on price (and also other factors such as quality of service).

43 Claims, 11 Drawing Sheets

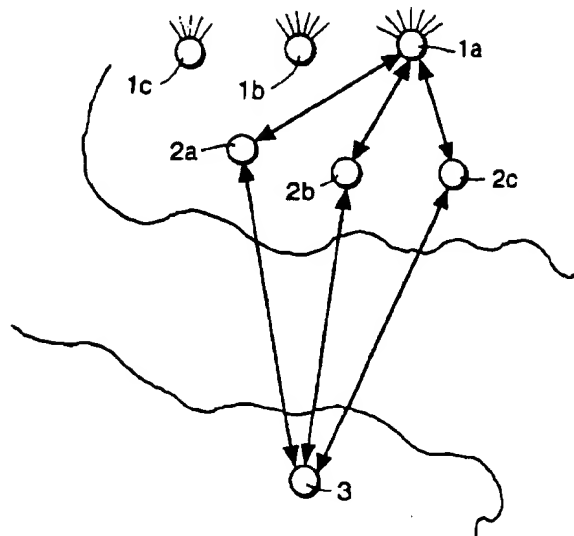


Fig.1

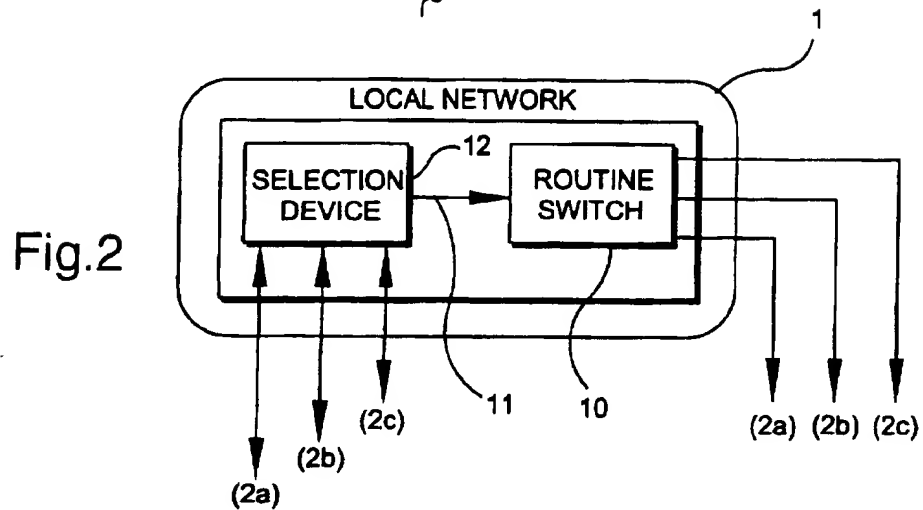


Fig.2

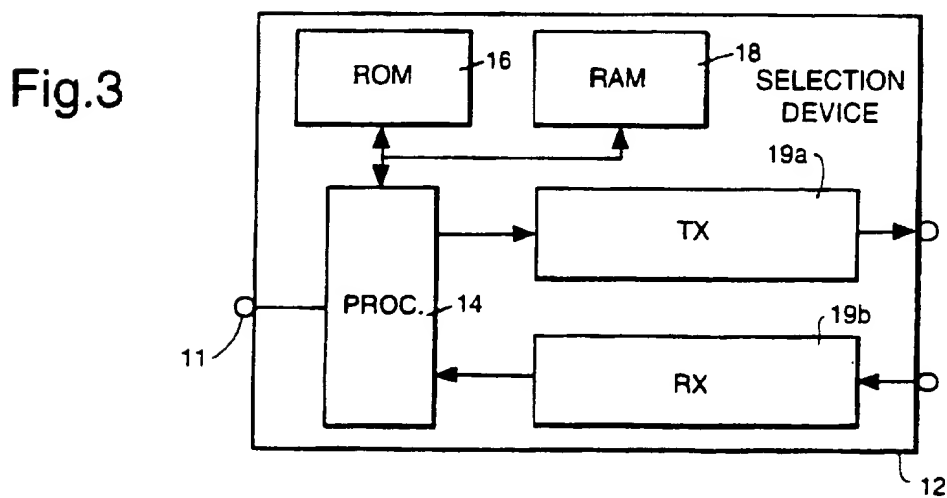


Fig.3

Fig.4

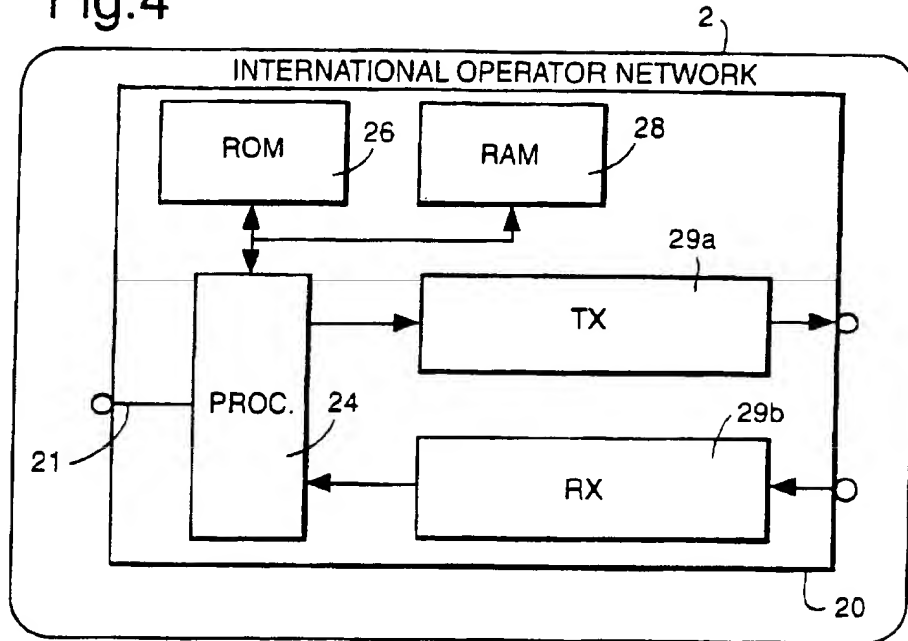
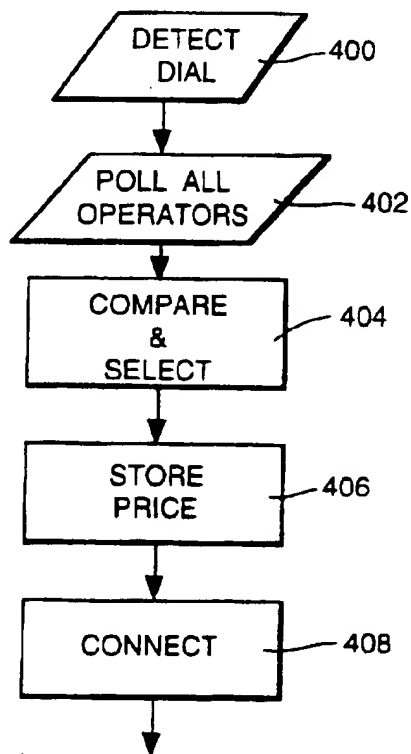


Fig.8



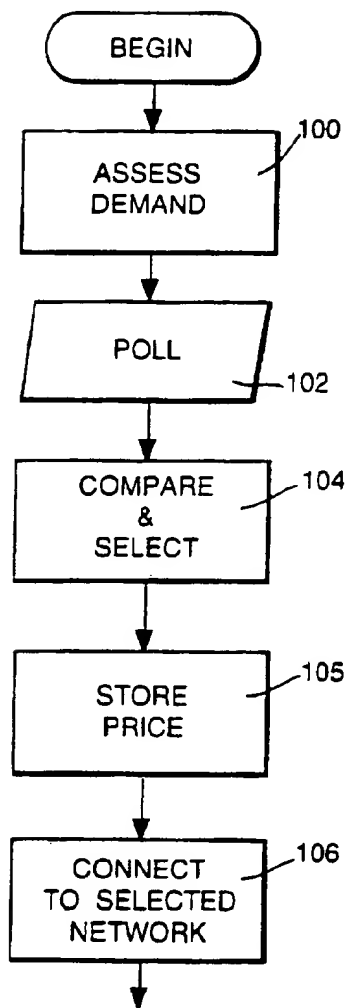


Fig.5a

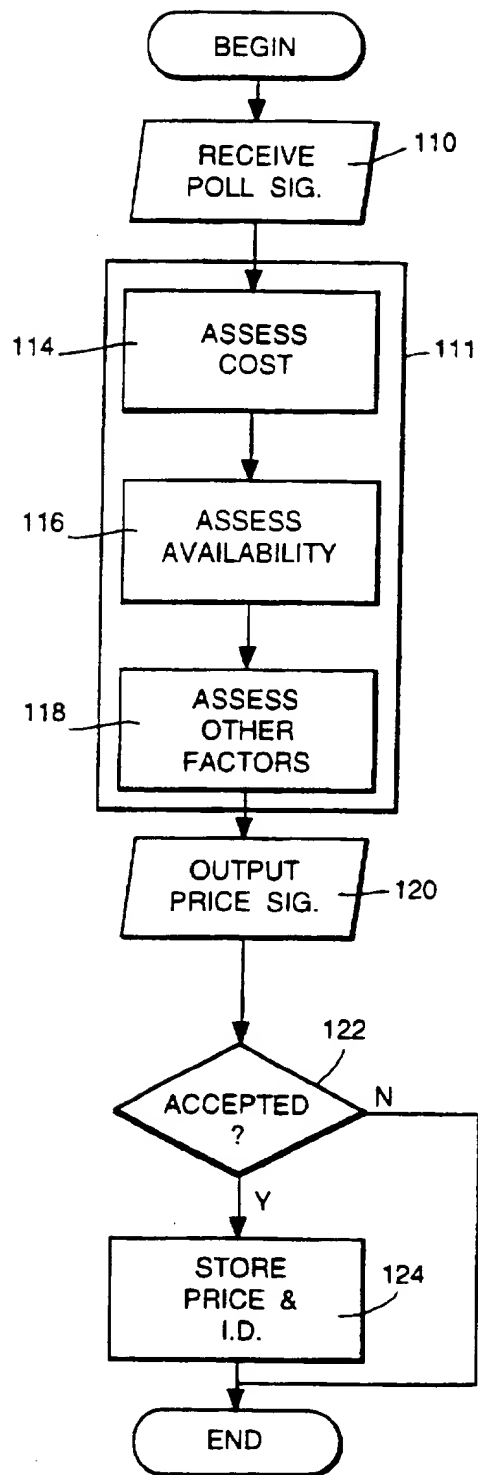


Fig.5b

Fig.6

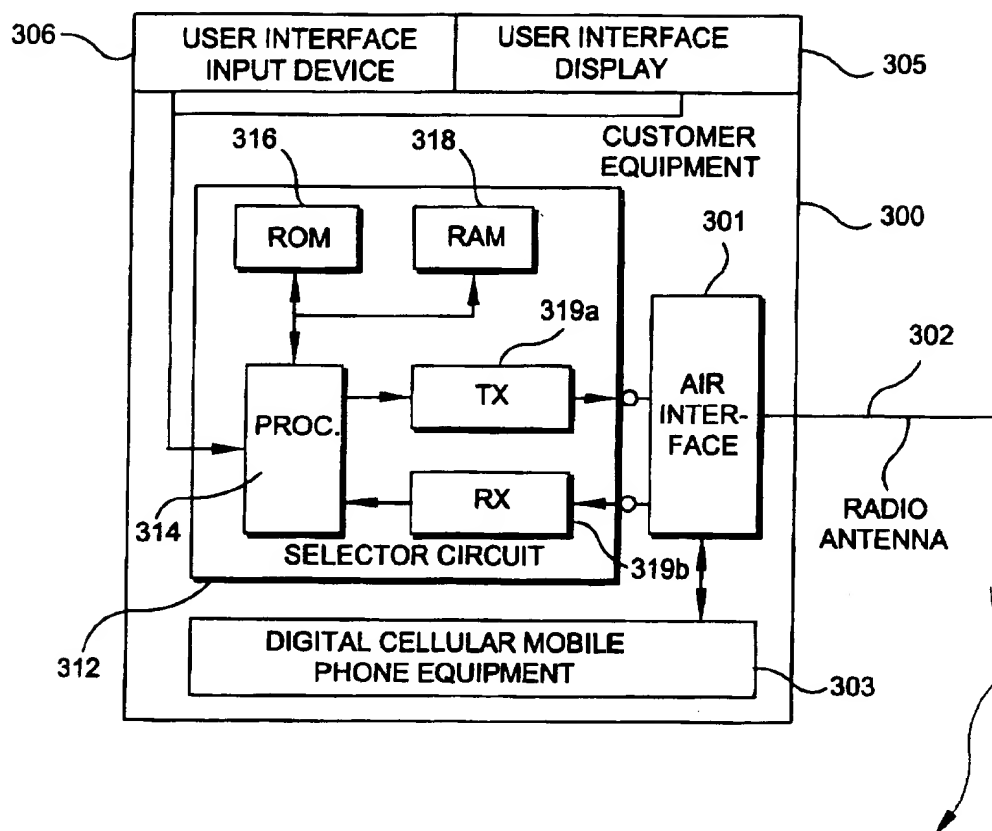


Fig.7A

Fig.7B

Fig.7C

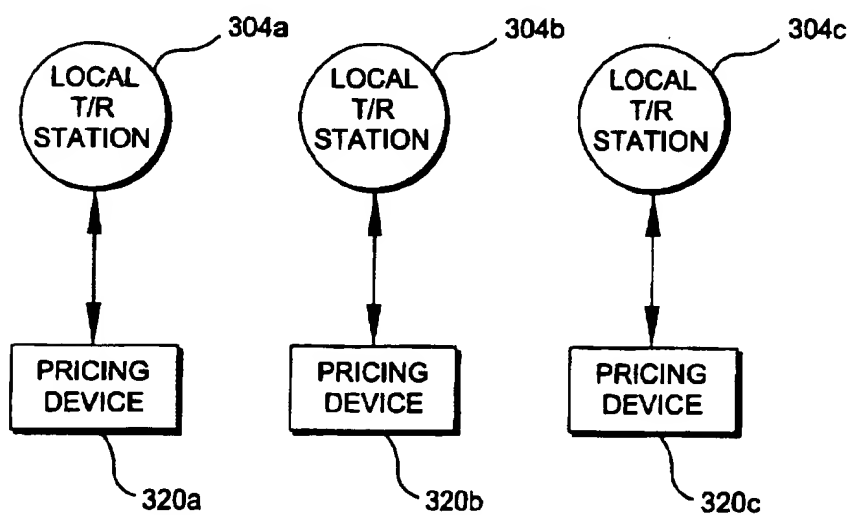
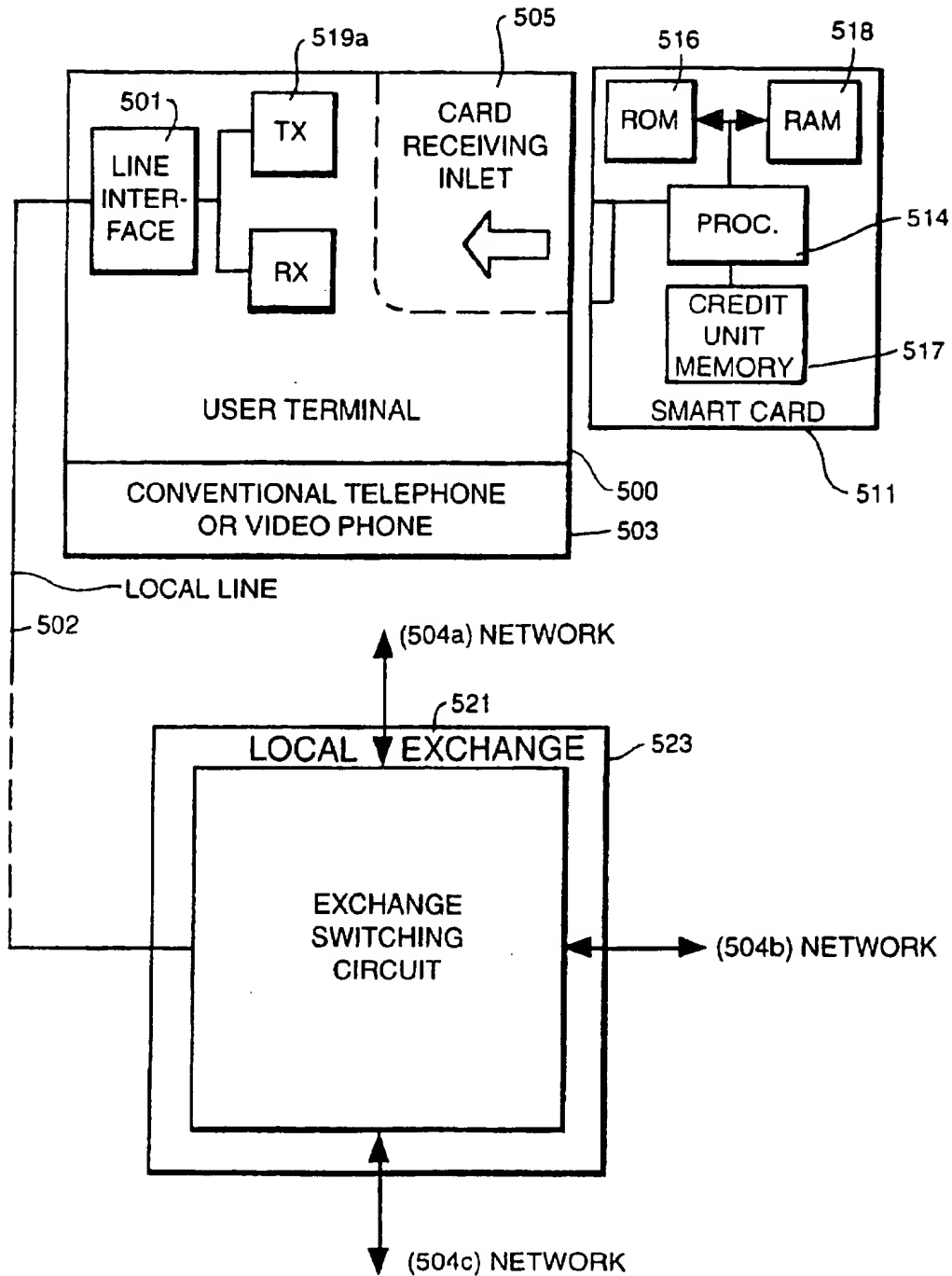
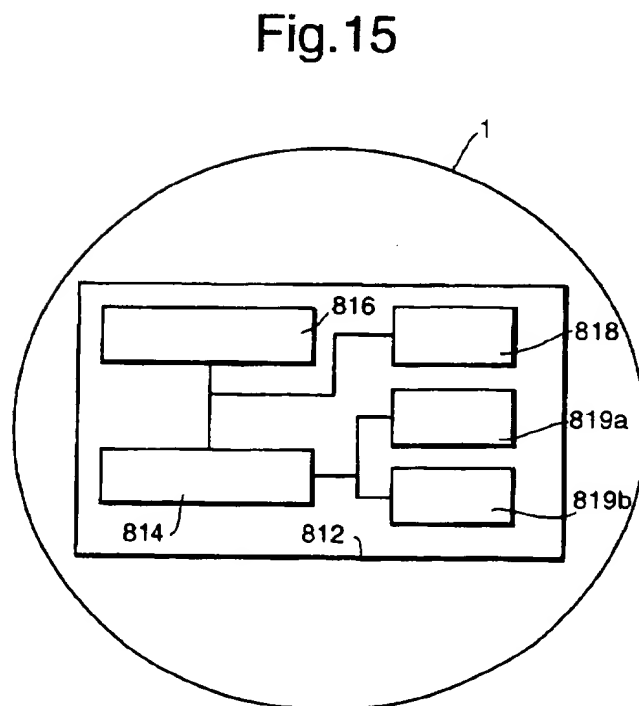
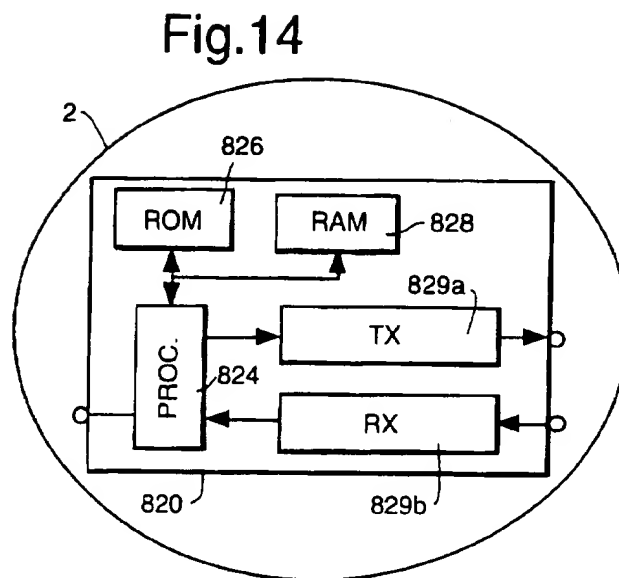
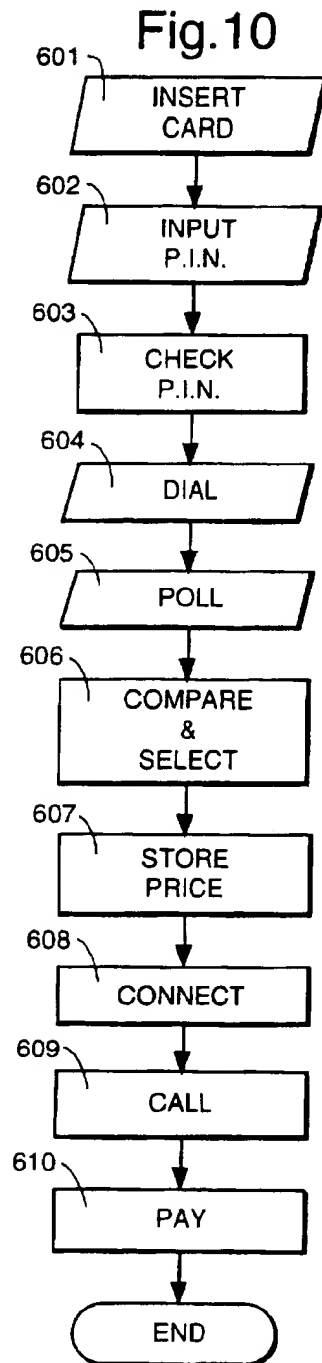


Fig.9





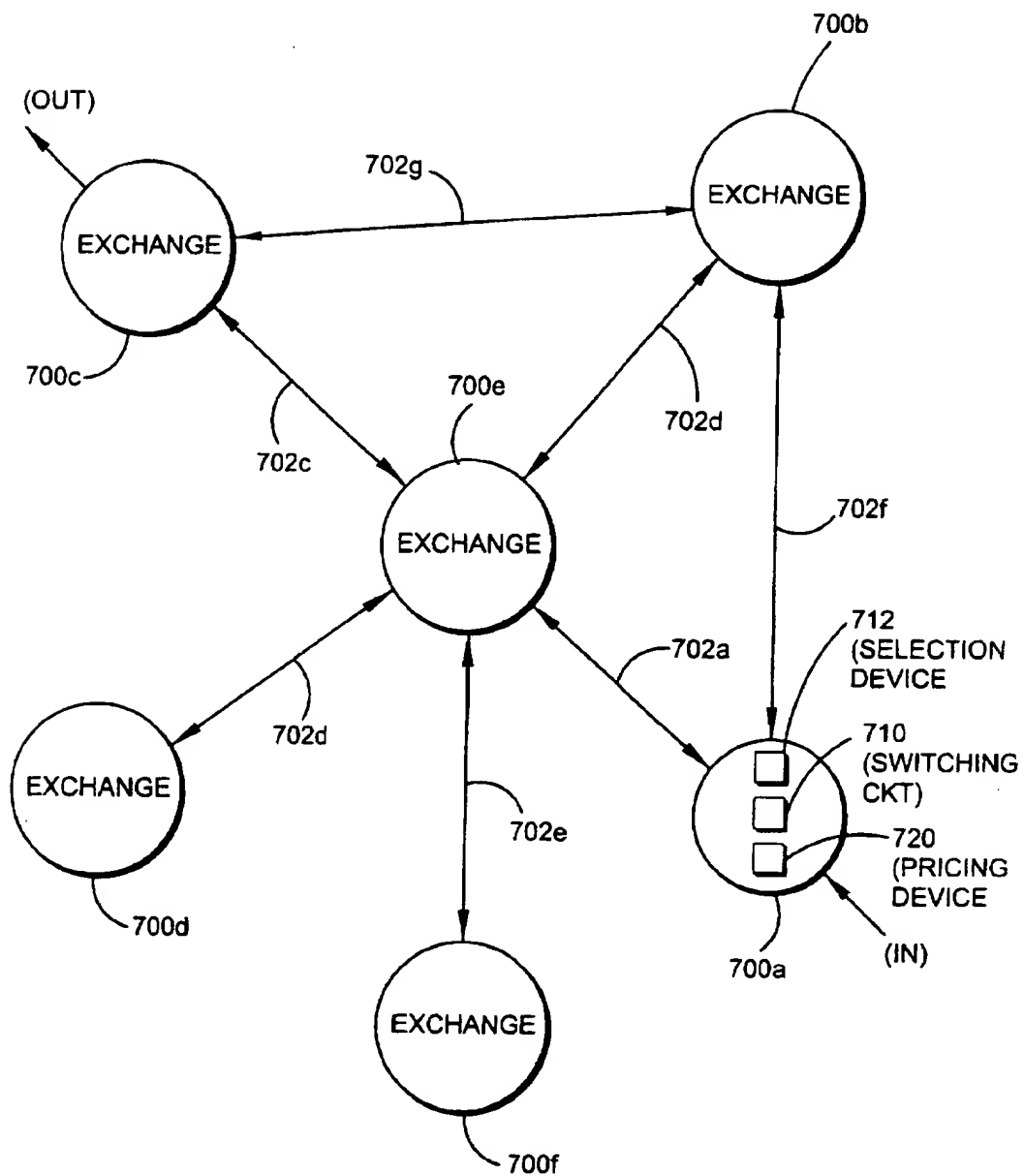
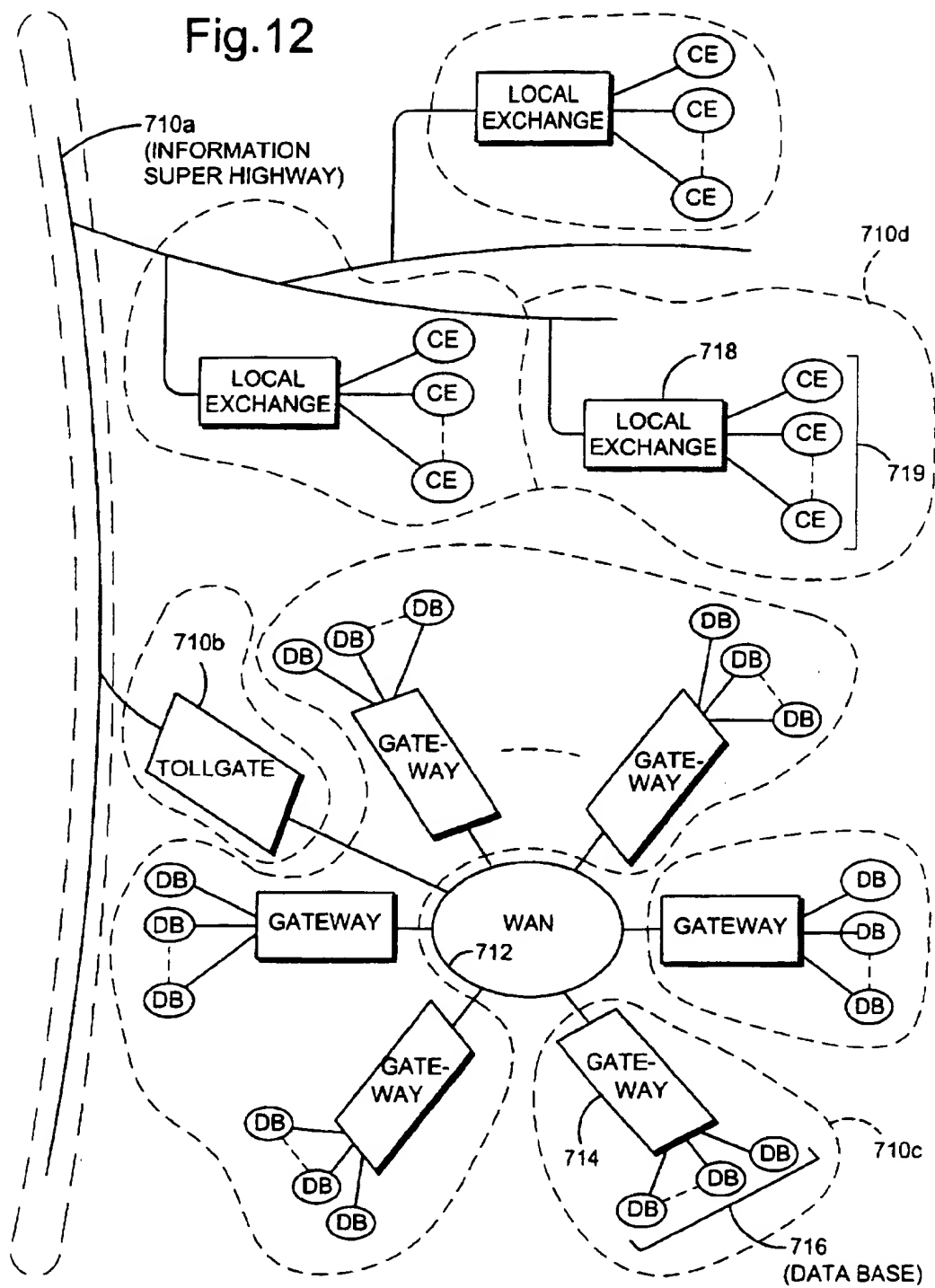


Fig.11



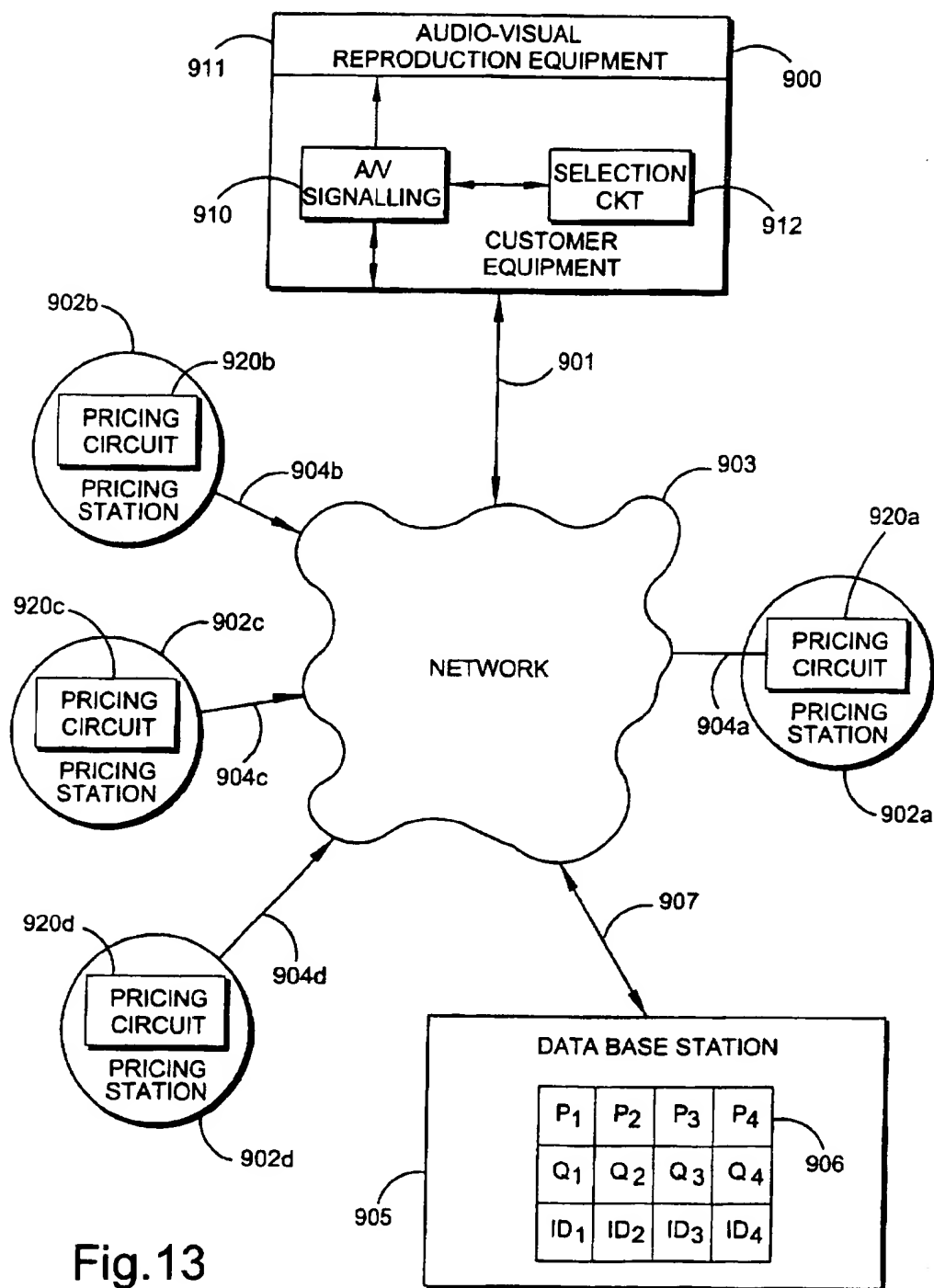
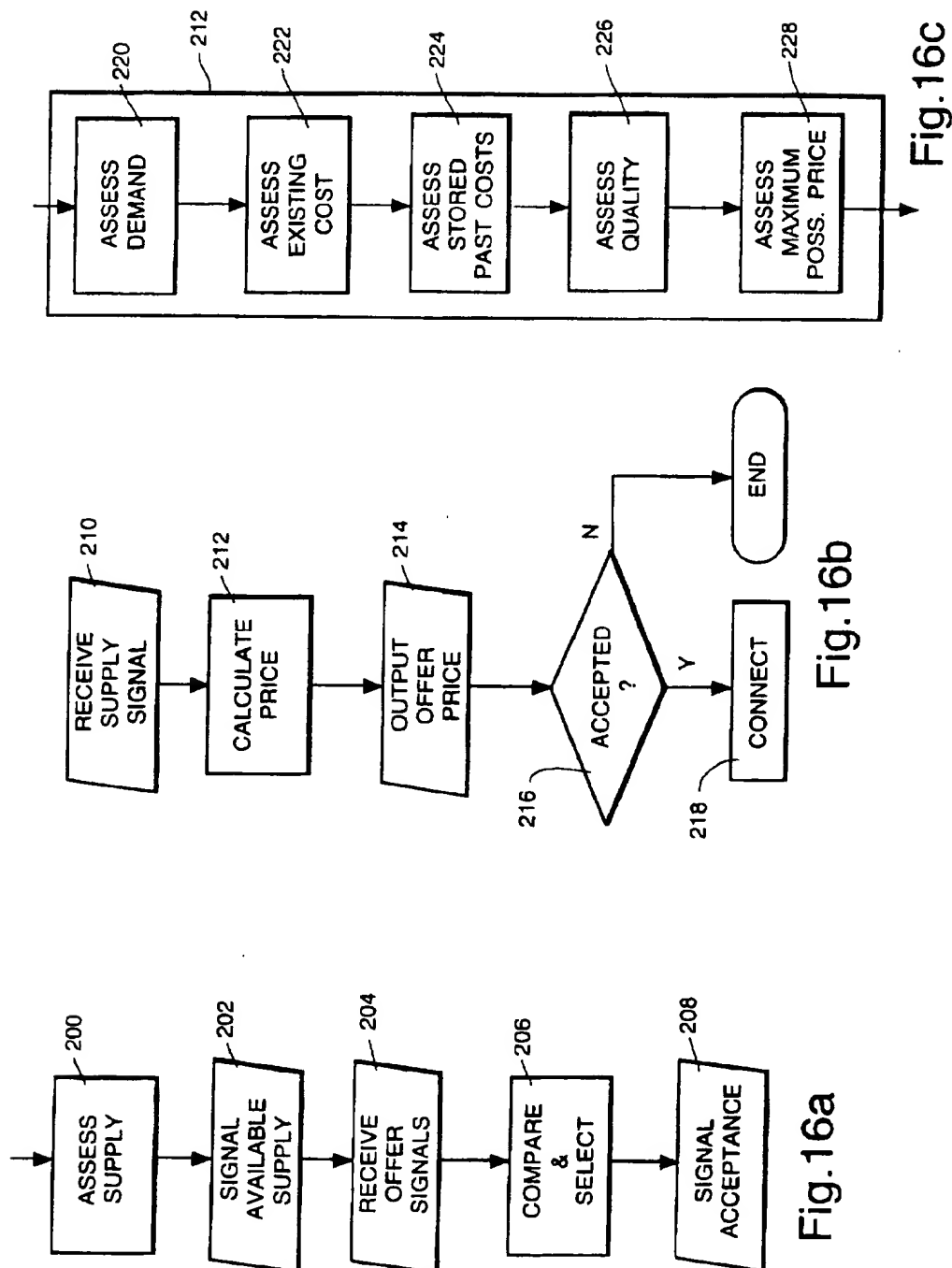
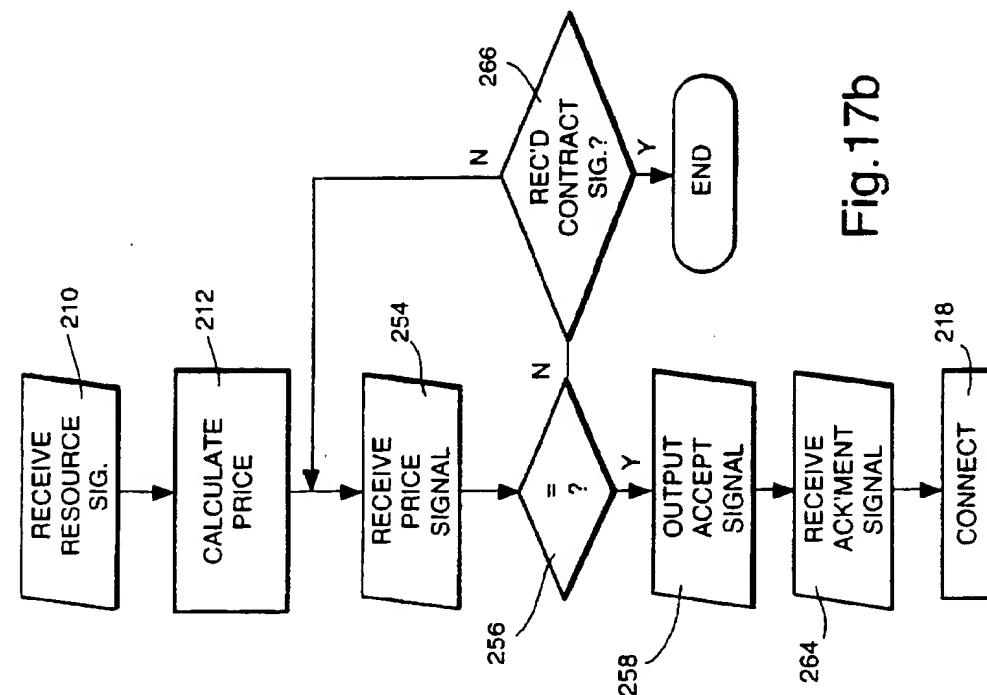
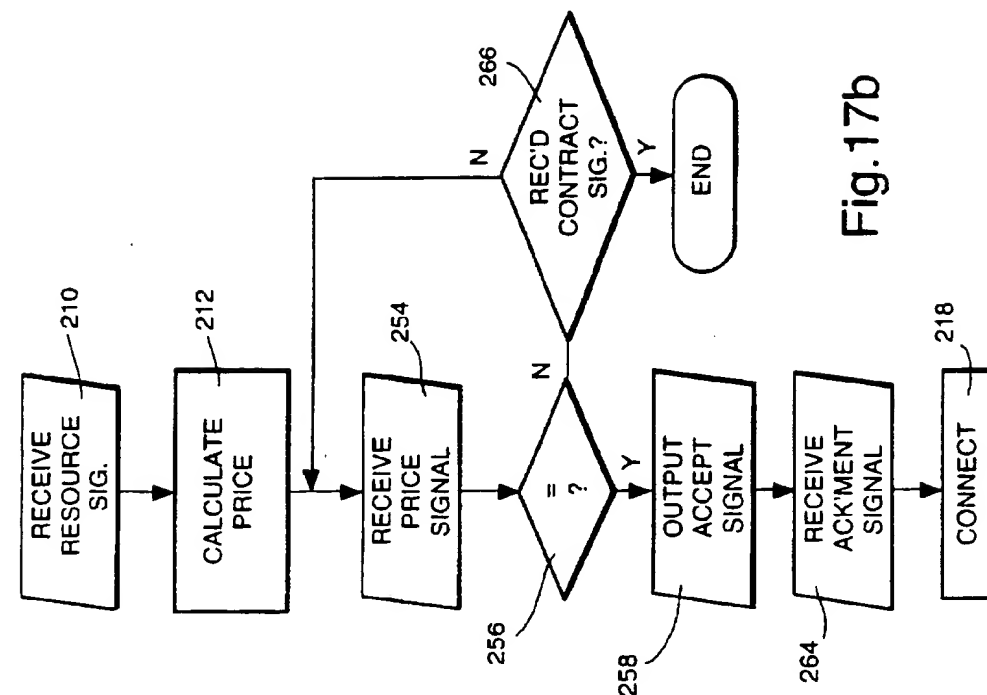


Fig.13





SYSTEM FOR SELECTIVE COMMUNICATION CONNECTION BASED ON TRANSACTION PRICING SIGNALS

This invention relates to communications apparatus, and more particularly communications apparatus for supplying and acquiring products and services from one of a plurality of suppliers.

The present invention is chiefly, but not exclusively, concerned with the supply of telecommunications services to a customer from a plurality of telecommunications suppliers. In many countries (for example the UK) telecommunications services are available to a customer from more than one telecommunications company. The customer therefore has the choice of obtaining services from more than one source, and this choice is exercised on the basis of price, quality of service and other factors (including brand loyalty). Different telecommunications providers may be accessible through a common telecommunications network. For example, in the UK, a telephone which is primarily part of a telecommunications network operated by a first supplier may carry buttons enabling the user to effect connection to the networks of other suppliers via that of the first.

At present, different telecommunications suppliers provide services at different prices, which may be calculated on different bases. Many service suppliers charge on the basis of time used, but different rates may be used in different time bands, and over different distance bands (e.g. local, long distance or international). The time and distance bands employed by different suppliers may differ, and additionally, different suppliers may offer features such as discounts for bulk usage, subscriptions, or lower prices at times of low network usage.

All of this makes it difficult, time consuming and expensive for a user of telecommunications services to make an informed decision based on price, and hinders the extent to which competition can regulate pricing within the market for telecommunications services. In general, users tend to form long term contracts with particular telecommunications service providers, and the service providers set prices relatively infrequently, in advance of each such long term contract. The overall level of prices (determined, for example, by reference to a basket of different services) may be moderated by some Government regulatory agency.

The present invention, in one aspect, generally concerns the provision of a telecommunications system comprising user negotiation equipment which is arranged to communicate with a number of telecommunications service providers to receive price data from each provider, and to select one service provider on the basis of the price data; and service provider negotiation equipment which is arranged to generate an estimated price for providing services and to communicate that price to the user equipment. The invention equally concerns both the user equipment and the supplier equipment independently of each other; indeed, the two may be located in different national jurisdictions.

Preferably, the prices are set in the short term, very preferably in response to each service requirement of the user negotiation equipment. This 'real-time' price setting further makes possible more complex negotiation transactions, such as auction, barter or exchange transactions, directly and in real time between the user and supplier apparatus.

Thus, in one exemplary embodiment, where a telecommunications customer wishes to initiate a plain old telephone service (POTS) call, upon actuating his handset equipment and dialling a destination, the handset equipment

issues a polling signal to the telecommunications network indicating the destination of the call, and service providers connected to the network transmit, in reply, a price signal (e.g. a price per unit time, for example in pence per minute).

The customer equipment then selects the network offering the lowest price, and signals to that supplier a requirement to connect the call. Thus, every call transaction can be made on the basis of competitive pricing. Given that, in future, telecommunications suppliers may comprise not only traditional telecommunications operating companies, but also owners of private networks (such as power, transport or other utilities) who have spare capacity, or large scale users of telecommunications services who have spare capacity, the present invention provides a mechanism for extremely effective resource allocation in which any potential telecommunications service supplier is able to propose a price which reflects the instantaneous amount of capacity available, thus matching telecommunications services users to available communications capacity, (even if only briefly available) as well as favouring efficient telecommunications suppliers.

In fact, the invention may also be applied within a single telecommunications network where multiple routes between points of the network are available; each exchange or switching centre in the network, and the links between, can effectively act as a cost centre and when there is the option of switching a message through to several different exchanges or switching centres, each may issue a price signal, the message being switched on the route offering the lowest price. The same principle can also extend, for example, to other communications network elements (e.g. databases). Thus, the network can be effectively "self-organising", allocating its resources in accordance with market principles (subject to macro economic, regulatory or other constraints).

Further the invention may be extended to services other than telecommunications services; for instance, providers of products or services such as entertainment providers, educational establishments, special interest groupings, or shops may likewise have pricing and price signalling devices, interconnected with a user via the telecommunications network, so that a user can use his/her telecommunications terminal to order goods or services from one of a plurality of competing sources.

It might be considered that the invention could equally be performed by human beings. However, consideration will show that this is not so; for example, in its application to telecommunications, it would clearly be impossible for a user to obtain competing quotes in advance for making a telephone conversation by a process of making several preliminary telephone conversations to establish price and then a further conversation to instruct the successful bidder, since this process would firstly cost more than the call for which the quotes were being provided, and would secondly (in preparing quotes, negotiating, deciding and placing the call) take such a long time that the ability to take advantage of real time, short term fluctuations in the supply and demand of telecommunication services would be lost.

Many other preferred features, aspects, embodiments and applications of the invention will be apparent from the following description and claims.

Embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

FIG. 1 shows schematically the connection between local and long distance networks in a first embodiment according to the invention;

FIG. 2 is a block diagram showing schematically the components of an exchange station within a local network forming part of FIG. 1;

FIG. 3 is a block diagram showing schematically the structure of a selection device forming part of the station in FIG. 2;

FIG. 4 is a block diagram showing schematically the structure of a pricing device within a long distance network of FIG. 1;

FIG. 5a is a flow diagram showing schematically the process performed by the selection device of FIG. 3;

FIG. 5b is a flow diagram showing schematically the process performed by the pricing device of FIG. 4;

FIG. 6 is a block diagram showing the structure of customer terminal equipment according to a second embodiment of the invention;

FIGS. 7a, 7b, 7c are block diagrams showing schematically a plurality of telecommunications networks with which the equipment of FIG. 6 is in communication;

FIG. 8 is a flow diagram showing schematically the process of operation of the equipment of FIG. 6;

FIG. 9 is a block diagram showing schematically the structure of a third embodiment of the invention;

FIG. 10 is a flow diagram showing the process performed by the apparatus of FIG. 9;

FIG. 11 is a block diagram illustrating the structure of a first telecommunications network according to a fourth embodiment of the invention;

FIG. 12 is a block diagram illustrating the elements of second network according to the fourth embodiment;

FIG. 13 is a block diagram illustrating the supply of services through a telecommunications network according to a fifth embodiment of the invention;

FIG. 14 corresponds to FIG. 4 and indicates the structure of a selection device according to a sixth embodiment of the invention (to which FIG. 1 is applicable);

FIG. 15 corresponds to FIG. 3 and illustrates schematically the structure of a binding device according to the sixth embodiment;

FIG. 16a is a flow diagram showing schematically the process performed by the selection device in this embodiment; and

FIG. 16b is a flow diagram showing schematically the process performed by the binding device of FIG. 15 in this embodiment; and

FIG. 16c shows in greater detail the process making up one of the steps of FIG. 16b in this embodiment;

FIG. 17a is a flow diagram showing schematically the process of operation of a selection device in a seventh embodiment; and

FIG. 17b is a flow diagram showing schematically the operation of a bidding device of the seventh embodiment.

First Embodiment

A first embodiment of the invention will now be described, in which the invention is applied in the context of long distance telecommunications.

Referring to FIG. 1, the networks 1 of several regional telecommunications operators (for example, local or national telecommunications operators or private networks) are designated 1a, 1b, 1c. Each is connected in turn to a plurality of long distance operators (designated 2a, 2b, 2c) which supply intercontinental communications channels via satellites, or subsea or transcontinental cables to a distant station 3. Each of the local operators 1a, 1b or 1c can connect with the distant station 3 via any of the long distance operators 2a, 2b, 2c.

Referring to FIG. 2, each of the local networks 1a-1c contains a routing switch or exchange 10 which selectively interconnects the network 1 with one of the operators 2a, 2b, 2c, to route long distance traffic via that long distance

operator. Such switches form part of existing telecommunications networks.

Also provided is a selection device 12, which is arranged to be in signalling contact with the networks 2a, 2b, 2c to exchange price information, as discussed in greater detail below.

Referring to FIG. 3, the selection device 12 comprises a digital processor 14, a program storage memory 16 storing the program controlling the operation of the processor 14, a working memory 18 storing data employed in operation of the processor 14, and transmit and receive circuits 19a, 19b (comprising, for example, wavelength division or time division multiplexing and demultiplexing devices) via which the processor 14 communicates with the network 1 and hence the long distance operators 2a-2c.

A control line 11 runs from the selector circuit 12 to the switch 10; conveniently, the two are co-located in a switching centre or exchange station in the network 1.

Referring to FIG. 4, each international operator network 2a, 2b, 2c includes a pricing device 20 comprising a processor 24, program storage memory 26, working memory 28, and transmit and receive circuits 29a, 29b, the latter two being for communication with the selection device 12. The processor 24 also has an input line 21 for receiving input data concerning, for example, current availability of long distance channels, from a network control centre at which the pricing device 20 may be located.

The processors 14, 24 may execute other tasks and may, for example, form part of network planning or network or service management computing devices.

Referring to FIGS. 5 and 6, one example of a method of operating the apparatus of FIGS. 1 to 4 will now be described.

Referring to FIG. 5a, at predetermined intervals, the selection device processor 14 of each network 1a-1c is arranged to assess its demand for long range calls in a step 100 (for example by examining the current number of such calls in progress, and/or by using stored average data indicating the typical demand for long distance telecommunications at the relevant time of day, possibly including consideration of the day type—holiday, working day, weekend etc.).

The processor 14 then polls the long distance operators 2a-2c in a step 102, by formulating a tender signal (preferably also indicating the approximate predicted level of its own demand or requirement) and transmitting this via the transmitting circuit 19a to some or all the long distance operators 2a-2c. This may be preceded by some initial 'handshaking' signalling to establish the identities of the selection device 12 and pricing device 20.

Referring to FIG. 5b, within each international operator network 2a-2c, the pricing device processor 24 is arranged to note the reception via the receive circuit 29b, of a tender signal in a step 110, to frame a price in a step 111, and to output a corresponding price level signal via the transmitter circuit 29a in a step 120. In this embodiment, the price calculation step 111 occurs after reception of a tender signal, but in other embodiments it would be possible to calculate the price level less frequently or at different times and to store price level data in advance.

In one method of calculating a price, the calculation step 111 comprises a step 114 of calculating a cost element (this is generally dictated by long term factors such as labour, building, fixed installation, maintenance, and other service provision costs and hence may be a stored constant, or a relatively infrequently updated stored value); a step 116 of assessing the availability of long distance telecommunica-

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tions resources (e.g. by monitoring the number of transatlantic cable channels or satellite channels which are currently free (or inferring this from those which are busy, and/or by using long term averages representing the average level of availability at the time of day concerned); and a step 118 in which other pricing factors are taken into account.

One of these other factors may be, for example, "feedback" about the level of price charged by other long distance operators; either in the form of direct information on their prices which may be publicly available, or indirectly in the form of a count of the number of past occasions on which the processor 14 has issued price level signals but has failed to secure additional business.

One simple algorithm for generating a price signal is as follows, where the cost is C, and the available capacity of the long distance operator is A;

$$\text{price} = ((1+a)C) + (b(A_{\text{old}}/A)) - (cN)$$

where N is the number of occasions on which the processor 24 has issued a pricing signal since the last occasion on which its pricing signal was accepted; A_{old} is the total capacity of the long distance operator for placing long distance communications; and a, b and c are constants.

Thus, using this equation, the processor 24 sets the initial price at some percentage above the cost, and then varies the price in inverse relation to the current availability of resources (according to the so-called 'law of supply') and in direct relation to the rate of take-up of services (i.e. according to the so-called 'law of demand'). Where the initial price is unreasonably high, by contrast with that of the competing long distance networks, it will be reduced progressively until it intercepts those of the competing networks, making each long distance operator competitive.

The level of demand transmitted by the processor 14 may be taken into account when setting the price, by adding it to the existing demand to calculate the (predicted) availability A.

The price signal, in addition to indicating the level of price (e.g. per minute, per packet or per bit) may also give other indications of the character or quality of the services to be provided; for example, an indication of the expected mode of transmission (e.g. satellite or fixed link); an indication of the security of transmission (e.g. encoded, encrypted or unencrypted), or an indication of channel parameters including parameters related to quality of service, such as delay and/or bit error rate (BER).

On receiving the price signals from each of the long distance networks 2a-2c, via the receiver circuit 19b, the processor 14 of the selection device is arranged, in step 104 of FIG. 5a, to select one of the long distance networks 2a-2c, and to store or record the price data concerned from that network for future use in billing. The processor 14 then outputs a corresponding signal on the line 11 to the switch 10 to route any further long distance calls to the selected long distance network in a step 106.

In the comparison and selection step 104, the processor 14 acts primarily to select the lowest price. However, account is preferably also taken of subjective (i.e. user judged) or objective quality of service data; for instance, networks which have transmitted price signals which include quality data indicating an unacceptably low level of quality may simply be ignored; or more typically, for each long distance network, an adjusted price may be calculated as: $P_{\text{adj}} = P + a_1Q_1 + a_2Q_2 \dots a_nQ_n$, where a_1, a_2 etc are predefined constants stored in the memory 18, and $Q_1, Q_2, \dots Q_n$ are different quality measurements such as delay, BER etc. Rather than using constants, it would instead be possible to provide

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non-linear weighting of each quality measure using predetermined non-linear functions F_1, F_2 etc in the form:

$$P_{\text{adj}} = P + F_1(Q_1) + F_2(Q_2) \dots F_n(Q_n)$$

Furthermore, preferably the processor 14 is arranged to take account of actual previous experiences with each long distance network by recording or storing in the memory 18 data representative of the actual quality of service encountered with each of the long distance operators 2a-2c, for example the actually encountered average BER; the number of customer complaints; the incidence of network interrupt; the level of audible echo and so on. Where long distance operators with no track record are newly encountered, an additional "safety factor" may also be added to the adjusted prices. The 'adjusted prices' thus in general serve as indicators of the desirability (judged in terms of financial value) of each of the long distance operators.

The processor 14 then selects the lowest adjusted price (i.e. price offered, adjusted in accordance with promised quality, and anticipated quality based on past performance). If prices are quoted in different currencies, then as well as taking into account currency conversion rates, the processor 14 may also need to take into account the volatility of the currency exchange rates concerned, and accordingly the store 18 or processor 14 may be linked to receive currency variation data from a financial information service provider.

Referring to FIG. 5b, when the selected pricing device detects that its price is accepted, in step 122, it stores the agreed price for the call in step 104 for later billing. The unselected pricing devices 20 take no further action.

The volume of calls placed with each long distance network 2a-2c at each price (and preferably also individual user data such as usage level) is then logged and stored (e.g. downloaded to a record medium), at an accounts computing device (not shown) connected to the selection device 12 and switch 10, to allow comparison with bills received from the long distance network operators 2a-2c.

The transmitters and receivers 19a, 19b, 29a, 29b are sending relatively small volumes of data; consisting, in each case, of indications of the source and destination of the tender or price message, and a relatively small number of bits indicating the approximate level of demand and/or the approximate level of price and/or predetermined standard types of contractual terms. Accordingly, they may utilise whatever low level signalling channels exist in the networks 1, 2; for example, out of band or tone signalling, or a portion of a packet header in digital packet transmission systems (e.g. an Asynchronous Transfer Mode (ATM) or Synchronous Digital Hierarchy (SDH) System).

As well as, or instead of, the above described polling system in which the customer networks 1a-1c issue tender signals and the supplier networks 2a-2c reply with price level signals, the pricing devices 22 may be arranged to generate new price level signals on a change of market conditions without awaiting a tender signal, and the selection circuits 12 may be arranged to respond thereto.

Needless to say, the long distance operators 2 and regional networks 1 need not be separated; rather, a single entity may offer regional and long distance communications links.

In the foregoing, long term or fixed costs are taken into account. In some embodiments of the invention, it is preferable to have short term knowledge of the moment-to-moment costs of operating the service provider. Thus, the pricing device 20 in such embodiments is connected to account centres within the network 2, and forms frequently updated cost estimates.

In one particular embodiment of this type, the pricing device 20 is arranged to generate a cost estimate in real time

(i.e. on receipt of a polling signal) by reading cost data from parts of the network 2 on receipt of a polling signal.

Where the service to be provided by the service provider itself relies upon services provided by another service provider (for instance, at the distant point 3), the pricing device 20 may be arranged, on receipt of a poll signal from a user 1, to itself issue a polling signal to the or each further service provider, so as to obtain an indication of the price to be paid to the further service provider, to be used in calculating a price for the user. On acceptance by the user of the price from the pricing device 20, the pricing device 20 may then signal acceptance to the further service provider.

Second Embodiment

In a second embodiment of the invention, customers (i.e. end users of telecommunications services) are equipped with selection circuits 12, which are arranged to select and connect between one of a plurality of telecommunications service providers in, for example, a city area or other locality or a communications Free Trade Zone (FTZ).

Referring to FIG. 6, customer equipment 300 (for example, a mobile phone) comprises an air interface circuit 301, connected to a radio antenna 302, and to digital cellular mobile phone equipment 303 of the type discussed in, for example, "Wireless Access and the Local Telephone Network", G. Calhoun, Artech House, Norwood, Mass., USA (1992). Also provided is a selector circuit 312, comprising programme and data memories 316, 318; a processor 314 and transmit and receive circuits 319a, 319b intercoupling the processor 314 with the air interface circuit 301.

Referring to FIGS. 7a, 7b, 7c a number of different radio communications network providers each have local transmit/receive stations 304a, 304b, 304c. For example, all may be offering digital cellular mobile services according to a common standard (e.g. the GSM standard) or some may be operating according to cordless telephone standards (e.g. DECT or CT2).

Connected to each of the stations 304a-304c is a pricing device 320a, 320b, 320c; the pricing devices 320a-c may be at the transmit/receive station, in a digital mobile base station or exchange, or at a central or local network switching or network control station.

For the sake of simplicity, in the following it will be assumed that each of the transmit/receive stations 304a-304c operates on a different band of frequencies, using otherwise compatible signalling procedures.

In this embodiment, the elements making up each of the pricing circuits 320 are the same as those illustrated as making up the pricing device 20 in the first embodiment, and hence will not be repeated for the sake of clarity. The elements making up the selecting circuit 312 of FIGS. 7a, 7b, 7c are functionally the same as those making up the selection device 12 of the first embodiment, but in order that the customer equipment 300 should not significantly be increased in size, the processor 314 comprises a suitably programmed microprocessor or microcontroller device, or may comprise such a device already performing other functions in the equipment 300.

Referring to FIG. 8, which corresponds to FIG. 5a, the general operation of this embodiment will now be described.

When the user selects (e.g. dials) a number via user interface circuits 305, 306, this is detected in a step 400 by the selection circuit 312. The processor 314 forms a tender message comprising the country code (if any) and area code of the dialled number; and controls the air interface circuit 301 via the transmit circuit 319a to transmit the tender message to the signalling frequencies of each of the networks 304a, 304b, 304c in a polling step 402. Alternatively,

if there is a common signalling channel provided, common to all the network operators 304, the tender message may be broadcast on that frequency.

Each of the pricing devices 320a-320c now follows generally the same process as in FIG. 5b. Likewise, the same pricing equation may be used as in the first embodiment above. Each then transmits back a price level signal (per minute or per bit), together with service type and quality information (e.g. encrypted, half rate/full rate, current BER etc).

Referring once more to FIG. 8, the price messages are received by the processor 314 via the air interface 301 and receiver 319b, and the processor 314 adjusts the various prices as in the first embodiment to take account of service quality factors (and/or other factors), and picks the lowest adjusted price in a step 404. The price and identity of the network operator is then stored in the memory 318 in a step 406, and the air interface 301 is controlled to establish a link with the selected operator for the duration of the call in a step 408.

During the call, the processor 314 counts the current time through the call, multiplies this by the stored charge rate, and may display the current charge rate and cumulative charge on the display 305 for the benefit of the user.

At the termination of the call, the processor 314 may generate a prompt on the display 305 inviting the user to confirm whether the quality of the just finished call has been acceptable by operating the input device (e.g. keypad) 306. In the event that the user should indicate the call to have been unacceptable, an entry is made or updated in the memory 318; e.g. to add a significant uplift to the adjusted price received in future from the operator concerned, so as to make the future selection of that operator less likely.

In this embodiment, in addition to performing the operation of steps 400-408 on an attempt to make an outgoing call by the user, the processor 314 may be arranged to do so at other times also; for example, each time the available channels are scanned as part of the normal registration process within a cellular communications network, or periodically within a call, or when the mobile apparatus 300 moves out of the area of coverage of one of the stations 304 with which it is presently in communication. In this embodiment, the processor 314 may utilise the well established handover procedures which enable a mobile unit 300 to change frequency, change between cells, or change between cellular operators (which are often based, at present, on signal strength criteria). In this case, the received signal strength or bit error rate (BER) may also be utilised in forming an adjusted price comparison as discussed above, as one of the quality indicators Q_i .

Third Embodiment

Referring to FIG. 9, the third embodiment is similar to the second embodiment, but the user terminal 500 in this embodiment may be a fixed terminal such as a telephone or a videophone (e.g. as described in "Digital Signal Processing in Telecommunications" (Ed.) F. A. Westhall & S. F. A. Ip, Chapman & Hall, London (1993)). It comprises a conventional telephone or videophone apparatus 503, arranged to communicate with a local line 502 via a line interface circuit 501.

In this embodiment, conveniently, much of the selector circuit 512 is provided on a card 511 of the so-called "Smart card" type, carrying the processor 514, programme and data memories 516, 518, and (in this embodiment) a credit unit memory 517 for storing an amount of credit for payment in respect of goods and services. The customer apparatus 500 comprises a card receiving inlet 505 into which the card is

insertable, carrying contacts for interconnecting the processor 514 with transmit and receive circuits 519a, 519b which communicate with the line interface circuit 501.

The local loop line 502 (e.g. copper or optical fibre cable, possibly including a wireless link) interconnects the customer apparatus 500 (located, for example, in an office or home) with a local exchange 523. At the local exchange station 523, the exchange switching circuit 521 is arranged not only to respond to normal dial tones, pulses or digits, but also to network selecting tones, pulses, digits or other signals, to interconnect the customer equipment 500 with one of several competing networks 504a, 504b, 504c. For example, at present in the UK, customer premises equipment connected to the network of British Telecommunications plc may carry a tone dialling button the actuation of which by a user causes the local exchange 523 to interconnect the user to equipment owned or leased by the network operated by Mercury Communications plc.

In this embodiment, referring to FIG. 10, when a user wishes to initiate a telephone call, he inserts the card 511 into the apparatus 500 (step 601) and initiates a call (e.g. by lifting the handset and dialling). Since, in this embodiment, the card 511 carries credit units which can be used for payment, the process of initiating a call also preferably involves a security or identity validation step in which the user may input (for example) a PIN code which is checked (step 602) against data held in memory 516-518 on the card 511, and the call is only allowed to proceed if the two match (step 603). After the user has dialled the number (in step 604), in a step 605 the processor 514 generates, via the transmit circuit 519a and the line interface circuit 501, a polling signal for each of the available network operators 504a-504c in turn, comprising a network indicating signal, a poll indicating signal, and signals indicating the destination number and the identity of the equipment 500. The local exchange 523 reacts to each of the polling signals in turn, to transmit each to the respective network operator 504a-504c.

Each of the networks 504a-504c contains a respective pricing unit 520 (not depicted), containing functionally the same elements as that shown in FIG. 2 in the first embodiment, and operating in the same manner as the first embodiment or in the second embodiment. Accordingly, on receipt of a polling signal, each of the pricing units 520a-520c (not shown) sends, in reply, a pricing signal indicating the level of charge (per minute, per bit, per packet, per frame of data, per circuit or, in the case of a virtual circuit, per part of circuit) back to the processor 514 via the exchange 523, generally in accordance with the process of FIG. 5b.

On receipt of the price signals, the processor 514 then compares prices and selects (in step 606) the network 504 having the lowest price (adjusted in accordance with the above embodiments), and stores identification data identifying the network and the charge rate in a step 607.

In a step 608 the processor 514 generates, via the transmit circuit 519a and line interface circuit 501, a network selection signal which is transmitted through the local line 502 to the exchange 523. The exchange 523 then, in a conventional manner, connects the telephone equipment 500 to the desired network 504, and the call progresses in a step 609.

At the outset of the call, charging data indicating the identity of the caller (or, more specifically, that of the card 511) is transmitted to the network 504 to enable the network 504 to automatically credit its account in units of credit as the call progresses; similarly, the processor 514 is arranged to debit the credit memory 517 as the call progresses. The processor 514 may be arranged automatically to debit the

card 511 at predetermined timing intervals determined by the stored price rate, or the network 504 may transmit conventional charging tones to the telephone apparatus 500 (as in conventional cash or card pay phones) to trigger the processor 514 to debit the credit memory 517. Should the credit memory 517 be empty, the processor 514 is arranged to generate an indication for the user to replenish the credit memory, or to terminate the call.

Rather than employing a "Smart card" credit memory 517, it would equally be possible to employ a card 511 carrying a magnetic stripe storage area of conventional form which stores prepayment credit data, or credit account data (of the type employed on credit cards, for instance), the telephone apparatus 500 being likewise provided with magnetic card reader means.

It would equally be possible for the payment to be effected in a single operation at termination of the call, or on a change of network within the call (if this occurs earlier).

It will be apparent that the provision of payment during or just after the telecommunication service is advantageous in reducing the volume of call data which would otherwise need to be stored by the user (although, of course, historical call cost data may optionally be stored in this embodiment also). This advantage is equally applicable to the earlier embodiments described above. Furthermore, the provision of rapid payment during or just after the provision of the service enables use to be made of brief opportunities (e.g. briefly favourable exchange rate periods) which is particularly useful in the first embodiment, since payment can be made whilst the favourable conditions prevail.

The provision of at least programme data controlling the operation of the processor 514 on a personal card is advantageous in that it enables users to benefit from their experience of different service providers, by storing data on the price and quality of services obtained from providers and using this data in subsequent selection of service providers. Thus, one user who has developed a successful pricing algorithm may sell, hire or disseminate the algorithm on cards to others.

Rather than retaining their personal card, a customer may alternatively allow or require a company (for example a telecommunications operator) to hold their card securely on their behalf, for example for security reasons, in exchange for some payment (e.g. in the form of a commission on the usage by the user). In this case, the entity holding the cards may itself be permitted to amend or improve the pricing algorithm for each user, or to comply with particular user requirements.

In general, the processor 514 could be incorporated into other types of equipment (for example, mobile music reproduction equipment) adapted to be coupled to public or private telecommunications equipment in use.

Fourth Embodiment

In the fourth embodiment, the invention is practised within a telecommunications network, to allow different paths for a message through the network to compete and hence permit the network to organise itself using price criteria.

Referring to FIG. 11, a telecommunications network may comprise a plurality of exchanges 700a-700f interconnected by cables (or other communications channels such as radio links) 702a-702g. Each exchange comprises a switching circuit 710 for interconnecting an input cable with one of a number of output cables leading to customer equipment, another exchange 700, or a different network.

Each exchange also comprises a selection device 712 and a pricing device 720.

Each exchange 700 in this embodiment is capable of acting as an individual profit or cost centre, aiming to maximise its own operating profit. When a message is to be transmitted between a node (e.g. user station) connected to a first exchange 700a and a node connected to a second exchange 700c, the exchange 700a polls each of the exchanges 700b, 700e to which it is connected via respective channels 702a, 702f. The polled exchanges then calculate prices and transmit price signals, in a similar manner to the above embodiments, taking account of costs and current circuit available capacity, and the first (polling) exchange selects the route via the exchange offering the lowest price.

As in the first embodiment, the pricing devices 720 may estimate prices incorporating frequently updated short term cost estimates. The process of determining a cost estimate may in turn require a pricing device to negotiate a price with another element of the network (for example, a trunk line or further exchange) in order to be able to supply a pricing signal, as in the first embodiment.

If both the polling and the selected exchanges are part of a single economic entity, then no actual payment need take place, but the polling exchange is notionally debited by the agreed price and the selected exchange is correspondingly credited, in the sense that a recording on a local or national account system is made after the call.

Thus, traffic through the network of FIG. 11 is controlled by price signals. Over time, busier exchanges will attempt to maximise profit by raising their prices, and so some traffic will spread to less busy exchanges. The network can thus be considered to regulate its own traffic distribution. It would also be possible to provide a procedure for utilising an element of the profit generated at each profit centre to expand that centre, and/or to ensure that the capacity of loss-making centres is cut back, so that the automated price competition between parts of a single economic entity operating a network can play a part in restructuring that network to favour more successful routes.

It will be seen that this embodiment is similar to the first. It differs in that, in this embodiment, components which are operated by a common economic entity, and which are conventionally viewed as cooperating subsystems, are placed in competition one with another as a means of internal traffic allocation.

Referring to FIG. 12, in this embodiment the profit centres 710a-710h in a network can comprise diverse different elements.

Examples of segments/units which could be operated as profit centres are:

- switching exchanges or groups of exchanges
- databases or groups of databases
- video-on-demand centres
- network/service management platforms
- application platforms
- information superhighways
- toll gates into networks or database systems
- LANs, MANs and WANs
- private networks
- individual workstations, computers, multi-media systems
- general and specialised directory services
- general and specialised information service bureaux.

In FIG. 12, 710a denotes a so-called "information superhighway"; 710b denotes a connection functioning as a tollgate between the information superhighway and a network (for example a WAN); 710c denotes a group of databases 716 connected to the WAN 712 via a gateway 714; and 710d denotes a local exchange 718 connected to a group of customer equipment 719. In each of the cost centre areas

(shown ringed by dashed lines in FIG. 12) there is provided a pricing device and a selecting device, generally in accordance with other embodiments. In the embodiment of FIG. 12, the pricing device for each cost centre 710 may be arranged to take account of the cost of a number of elements; for example, the pricing device of the cost centre 710d may take account of not only of the cost of operating the exchange 718 but also the lines connecting the exchange to the consumer equipment 719, and to other exchanges or networks.

The level to which the network is divided into individual cost-centres may vary; over time, it is likely that finer divisions will be sought so as to make greater use of the self-regulating effect of the pricing negotiation process.

As in other embodiments, the selection process in this embodiment preferably takes account of expected or predicted quality or other factors. This embodiment may employ any of the features of the other embodiments, *mutatis mutandis*.

The pricing signals may be carried by ATM or SDH packet headers. In this embodiment, the invention may be performed by modifying the stored programme control (SPC) sequences of exchanges operating under, for example, the Signal 7 (S7) system intended for intelligent networks (IN).

Fifth Embodiment

In this embodiment, the invention is applied to the provision of goods or services through a telecommunications network, from a plurality of sources interconnected with a user through the network.

Referring to FIG. 13, a plurality of service providers (for example, video on demand suppliers) have pricing stations 902a-902d each comprising a pricing circuit 920, and a communications circuit (not shown here) for connection to the network 903 via a respective transmission channel (e.g. local line) 904a. Also provided in the network is a database station 905 comprising a digital store 906 (e.g. RAM) storing a plurality of price data, corresponding to price level signals for each of the pricing stations 906a-906d, the database station 905 being connected to the network 903 via a communications link 907 (e.g. a local line).

Customer equipment 900 comprises audio visual reproduction equipment 911 (for example, a conventional television, or a monitor and audio reproduction circuit); and an audio visual signalling unit 910 suitable for receiving video on demand. Also provided is a selection circuit 912, having generally the same structure as the selection device shown in FIG. 3, FIG. 6 or FIG. 9.

In operation, each of the pricing devices 902a-902d in the respective pricing stations 902a-902d periodically generates estimated prices for video on demand services, based on costs and demand in a manner similar to that described with respect to the first embodiment. Each pricing station 902 then periodically transmits price level data P, together with data (ID) indicating the identity or telephone number to be dialled by the user equipment 900 to obtain video on demand services to which the price relates, together (optionally) with quality data Q indicating, for example, resolution; wide screen/narrow screen format; stereo/mono sound track; or other issues relating to the quality of the service.

Referring to FIG. 14, when a user wishes to obtain video on demand services, he inputs an indication of his desire to do so to the processor 914 of the selection circuit 912. In this embodiment, the selection circuit 912 then generates dial tones or pulses to access, via the network 903, the line 907 leading to the database station 905, and transmits to the database station 905 an indication of the nature of the

services required (for example, an indication that a western or horror film is required).

In response, the database station 905 supplies price, identity and quality data, which has previously been supplied by each of the pricing stations 902a-902d. The connection is then suspended, and the selection circuit 912 evaluates the lowest "adjusted" price as in the above described embodiments, taking account of quality of service data and any stored data relating to previously encountered quality and price associated with suppliers having the same identity in the past.

Having made a selection as before, the price rate is stored and the control circuit 914 selects a number indicated by the ID data supplied by the database station 905 to obtain the video on demand services at the quoted price.

The pricing stations 902a-902d may be, but are not necessarily, provided at video supply stations connected to the network 903.

In this embodiment, it will be clear that many different types of services, or indeed goods, could be supplied in the same manner.

In the above described embodiment, a central database (or locally distributed, updated copies thereof) is accessed by the different pricing stations 920 to hold price data. This has some advantages, in that the user equipment 900 need only access a single point rather than communicating with multiple suppliers as in the above embodiments. It also has the advantage that price details may be kept more confidential from other suppliers, by providing that the database station 905 is operated by an independent party (for example a regulatory authority).

Rather than providing a selection circuit 912 in the customer equipment 900, it would be possible to provide instead a selection circuit 912 in the database station 905, which would then make a recommendation to the customer station as to the cheapest or best value currently available, rather than supplying all stored price information relating to different suppliers and enabling the customer equipment 900 to make the decision.

In this case, rather than providing a single selection circuit 912 proffering the same selection to all customer equipment 900, it would be possible for the database station 905 to store data enabling a different selection process to be performed for different users (for example, storing different predetermined constants in the price adjustment equation given in the first embodiment). The database station 905 is thus, in this case, acting somewhat as a "broker" impartially recommending one of a plurality of service providers.

The arrangement of providing a separate database storing price data from a plurality of different suppliers, thus effectively interrupting the direct communication between the selection device and the pricing device, is also applicable to the earlier embodiments in which telecommunications services are provided.

Multi-media

In the above embodiments, audio or audio/video telecommunications services are provided. It is equally possible to apply the invention to multi-media telecommunications services, in which data (e.g. text data) communications channels are provided as well as video and/or audio, in a single telecommunications session. In this case, the user apparatus typically may comprise sound input and output devices (a microphone and a loudspeaker); video input and output devices (a camera and a visual display unit); a graphics input device (a mouse, track-ball or stylus/pad combination); document input and output devices (a scanner and a printer); a text input device (a keyboard); and a control

or monitor display (a visual display unit typically with a menu or graphical user interface (GUI) such as Windows (TM)) for controlling the user apparatus in conjunction with the text or graphics input device.

A control and processing device or devices (for example a microprocessor such as the Intel 486DX microprocessor and/or a digital processing device such as the Texas Instruments TMS320) is arranged to process and route data and audio and visual signals between the input and output devices and to and from the line interface circuit, which is adapted to receive and transmit data in a suitable multi-media format (for example an ATM format).

Each data stream (audio, video, text) may be provided via a separate logical channel (typically sharing the same physical cable), and the terms and price of connection over each channel may each be separately negotiated each in the same manner as in the other embodiments. The monitor display may carry an indication of the state of progress of the negotiation for each channel, and/or charging or cost information.

Typically, the user equipment would be provided by a computer work station, with ports for connection to the audio, video and text input and output devices discussed above.

Sixth Embodiment

In the foregoing embodiments, the process of reaching an agreed price between the selection device and the pricing device has been described as being initiated by the selection device whenever a demand for services arises, the selection device operating to select one of a number of proposals from competing pricing devices.

However, the situation may often arise that a telecommunications or other service provider has a surplus of available capacity. The same may equally be true of a user of telecommunication services (for example, a multinational company) who has purchased a capacity in excess of their requirements.

Accordingly, in this embodiment, telecommunications resources are periodically offered as being available, and telecommunication users make competing bids for the available resources. This embodiment is more useful where the user of telecommunications services is a large scale user, with a relatively constant demand (at some level) for telecommunication services, rather than a private individual or other small end-user.

For example, this embodiment is applicable to the situation described with reference to FIG. 1 in the first embodiment, in which plurality of long distance networks 2a-2c offer services to a plurality of local networks 1a-1c.

Referring to FIGS. 14 and 15, in this embodiment each long distance network (service provider) 2 comprises a selector device 820, and each local telecommunications network 1 (service user) comprises a bidding device 812. The bidding device 812 comprises a processor 814, programme and data storage memories 816, 818, and input and output signalling devices 819a, 819b, (functionally corresponding to the equivalent devices 12, 14, 16, 18, 19a, 19b of FIG. 3) and likewise the selection device 820 comprises a processor 824, program and data storage memories 826, 828 and input and output signalling devices 829a, 829b (equivalent to corresponding devices 24, 26, 28, 29a, 29b of FIG. 4).

Referring to FIGS. 16a and 16b, the operation of this embodiment will now be described.

As in the first embodiment, each processor 824 in the long distance network 2 is arranged to periodically derive the available capacity A of the network (on a regular basis,

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and/or in response to sudden changes in availability of long distance channels) in a step 200. The available resource capacity (e.g. number of channels available) is then transmitted in a step 202 to each of the bidding devices 812 of the local networks 1a-1c (together with, for example, data indicating expected quality of services, channel type, bit rate and so on).

Each of the bidding devices 812 in the local networks 1 receives the resource capacity signal transmitted by the long distance network selection device in a step 210; calculates a price in a step 212; and outputs the calculated price in a step 214.

The selection device 820 receives the price offer signals in a step 204 from each of the local networks 1; compares the prices and selects the highest price in a step 206; and signals acceptance back to the selected local network in a step 208, to indicate entry into a binding contract, for the execution of which an appropriate connection is made.

The local networks 1a-1c each await the reception of an acceptance signal. The local networks which are not selected take no further action, and the local network which receives the acceptance signal connects to the long distance operator in a step 218 to utilize the long distance operator at the price agreed (which is likewise stored in the bidding device 812).

The price calculation step 212 carried out by the bidding device in this embodiment typically comprises a step 220 of assessing demand for the services offered; a step 222 of assessing the current costs of equivalent services being used; a step 224 of assessing stored costs of equivalent services used in the past; and a step 226 of assessing the quality of the services being offered (on the basis of any transmitted quality data and any stored data relating to the quality of services previously received from the same long distance network) as shown in FIG. 16c.

If the demand assessed in step 220 is low because the service on offer is not currently required by many users of the local network 1, the bidding device 812 may simply not calculate a price at all, or may output a low price (in order, for example, to acquire the services for subsequent resale). If the demand assessed in the step 220 is already being substantially met, so that no excess demand exists, the bidding device 812 may calculate the cost based on the cost of the existing services assessed in step 222, by decrementing the existing costs assessed in step 222 (to take account of the cost inherent in changing supplier); and making a positive or negative adjustment based on the quality assessed in step 226 and adjusted to take account of any relevant past cost data assessed in step 224 (e.g. indicating that the particular long distance network is cheaper than the existing supplier in general).

If a large excess demand for the offered services is assessed to exist in step 220 by the processor 814, the processor 814 generally sets the bid price in a direct relationship with the level of excess demand. For example, the processor 814 may assess the maximum possible price which it can afford to pay (i.e. the price at which the network 1 makes no profit from the acquisition of the offered services) in step 228, and set the bid price between the existing service price assessed in step 222 (or a stored past price assessed in 224) and this maximum possible price, in proportion to the fraction of the demand for the offered service which is currently unmet (the excess demand).

Thus, in this embodiment, the bidding device 212 operates generally to calculate the bid price in direct relation to the level of unmet demand which it has for the offered services.

In other aspects, the operation of this embodiment is as described in relation to the first embodiment. The two

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embodiments are, of course, not exclusive; the processors 812, 824 of this embodiment may also be arranged to comprise the processors 12, 24 of the first embodiment.

This embodiment could equally be utilised in any of the second to fifth embodiments described above.

Seventh Embodiment

The operation of this embodiment is similar to that of the preceding embodiment, in that long distance telecommunications networks 2 (service suppliers) each comprise a selection device 820, and local networks (service users) 1 each comprise a bidding device 812. In this embodiment, however, the selecting device 820 operates more in the manner of an auction.

Referring to FIGS. 17a and 17b, in the embodiment, after the assessing step 200 and the outputting a resource indication signal step 202 (as in the previous embodiment), the selection device 820 in this embodiment is arranged to calculate an initial price in step 250 and to send the price in a step 252 to each of the bidding devices 812 of the local networks 1 in a step 252.

The price calculation step 250 in this embodiment may be essentially the same as in the first embodiment, except that an uplift is added to an initially calculated price, so as to raise it to the highest level at which the resource can realistically be offered.

In this embodiment, each bidding device receives the resource signal in a step 210 and calculates the price which it will be bid for the resource in a step 212, both as in the previous embodiment. However, the price is not output from this embodiment. Instead, the bidding device 812 awaits the price signal from the selection device 820, which is received in a step 254. The received prices are compared with the price calculated in the step 212 in a step 256. If the received price is the same or lower than the calculated price, the bidding device sends, in a step 258, a signal indicating acceptance to the selecting device 820. The selection device 820 waits, for a predetermined interval, for acceptance signals from the bidding devices 812 in a step 260.

When one or more acceptance signals are received, the first acceptance signal is taken to form the supply contract, and a confirmation signal is transmitted back in a step 262. If no acceptance signals are received in the step 260 within a predetermined time, the selection device returns to the step 250 and recalculates a lower price, by decrementing the existing price by a predetermined amount. The following steps are then repeated, either until an acceptance is received from one of the bidding devices 812 or until the price calculated in the calculated step 250 reaches some lower threshold (beneath which it is not economic to offer telecommunication services).

At the bidding device 812, after the transmission of an acceptance in the step 258, the bidding device awaits the receipt of a contract acknowledgement signal in step 264, and subsequently proceeds to connect to the selected long distance operator in the step 218.

If the price signal received in the step 254 is higher than the price calculated in the step 212, the bidding device detects in a step 266 whether a 'contract formed' signal has been transmitted by the selected device 820, signalling the end of the process. If not, the bidding device returns to the step 254 to await the receipt of a lower price signal from the selection device 820.

Although in the above described process a reverse, or "Dutch" auction has been described, it will be apparent that the operation of the bidding and selection devices 812, 820 in FIG. 17a and 17b could readily be modified to carry out a normal auction in which the price signals generated by the

selection device are progressively increased until only one bidding device remains active.

Furthermore, the transmissions between the bidding and selection devices may be performed on a common broadcast channel, so that each bidding device can monitor the behaviour of other bidding devices, and alter its future behaviour appropriately.

Although in the above-described 'conventional' auction processes the sequence of price signals monotonically increases or decreases, non-monotonic behaviour might occur in some embodiments.

Eighth Embodiment

In this embodiment, rather than exchanging services for financial payment, an exchange of one class of services for another (or of services for goods or vice versa) is performed.

This embodiment may be performed by the apparatus of the first embodiment, for example. In this embodiment, the selection device 12 performs the steps 100-106 indicated in FIG. 5a. However, at the outset, a step of capacity assessment is performed by the selection device 12, to assess the available capacity of services (e.g. 64 Kilobits/second digital links), and a service with high availability is selected as the medium of payment with which to acquire long distance telecommunication services. The polling signal transmitted in the step 102 in this embodiment therefore indicates that payment will be made in units (e.g. minutes, packets or bits) of an identified service type. The remaining operation of the selection device 12 in this embodiment is as in FIG. 5a, except that the prices compared are in units of call services of the identified class, rather than in terms of money.

Likewise, in FIG. 5b, one of the pricing factors assessed in the step 118 is the demand or value of the offered local service to the long distance network operator. If the value is insignificant, the price calculated by the pricing unit 20 (in units of the indicated local call service), is much higher than if the long distance operator 2 has a demand for (or places a value on) the local service offered as payment.

Thus, in this embodiment, units of one type of telecommunication service (local services) are offered in exchange for units of another type of telecommunication service (long distance services).

In fact, the long distance networks 2 may also offer local services and the local networks 1 may also offer long distance services, so that this embodiment is able to offer inter-operability between competing networks so as to utilise the resources of both.

Equally, the embodiment may be used as a means of allocating resources between local and long distance parts of a single network.

The resources offered in exchange for telecommunication services in this embodiment need not be limited to further telecommunication services; they could, instead, be amounts of payment in different currencies; options to procure telecommunication services at a certain price in future; or other types of assets such as shares.

Other Embodiments

In view of the foregoing, many other alternatives, embodiments and modifications will be apparent.

For example, the pricing processes above may extend over several stages of negotiation, with an initial high price being answered with a low offer, to converge on a price between the two. The bidding, tendering, bartering and auctioning processes described above may thus be extended into more complex combinations of price negotiation. More complex mechanisms for adopting particular tactics (such as estimation of competing bids and undercutting) may be provided.

Multiple selecting devices 12 may communicate with each other to share pricing and quality information received from pricing units, or even to jointly acquire telecommunication services on a shared cost basis. This could in principle lead to complex interactions in the telecommunications service market, causing the possibility of sudden violent or discontinuous price changes as multiple selection devices simultaneously make the same choice at the same price.

Where user apparatus has a visual display device, supplier apparatus may periodically generate 'advertising' messages indicating price, nature or quality and/or availability of service data, and the user apparatus may display such data.

In order to acquire information on competitors prices, telecommunications service providers may emulate the behaviour of selection devices, and issue polling signals in order to gather price information. Such price information may then form the basis for setting prices by pricing devices of that telecommunications supplier. To avoid such behaviours, verification or security procedures may form part of the polling and bidding process.

Rather than using a PIN, it would be possible to use other security checks (e.g. voice recognition). It would be possible to make such security checks intermittently during, as well as before, a transaction.

It may also be desirable to provide regulatory devices, which periodically monitor the prices offered by pricing devices (for example in a particular locality) to detect apparent cartel behaviour in which identical prices are offered by competing suppliers over a prolonged period, or other types of anti competitive behaviour.

User equipment may incorporate a disabling device, selectively remotely operable, to halt such behaviour when it is detected.

Rather than operating deterministic pricing and selection algorithms, the pricing and selection devices may be provided with self learning structures in which prices are calculated, and/or bids are evaluated and compared, using for example "neural network" algorithms (e.g. feedforward networks of the multilayer perception or back propagation type or Hopfield networks) based on service availability, demand levels, and historical stored data relating to these and possibly other factors.

Means for allowing manual intervention by a human operator, to override or arbitrate negotiation, may be provided. To this end, means for automatically accessing particular personnel (e.g. advisors or arbitrators) may be provided. Such additional functions may be provided as plug-in modules for attachment to a personal computer or telephone apparatus.

It will be clear that the invention is applicable to the supply of all types of telecommunication services; for example plain old telephone services (POTS); multi-media services; video telephony; fax and digital message communication; and so on. Equally, the invention is applicable to the supply of services via telecommunications; for example video on demand, entertainment services and so on.

Further, the invention may be applied to other resource allocation or service provision domains. For example, an electrical supply grid operating computer may poll a plurality of competing electricity generator operating computers, to arrange, in real-time, the price and terms of the supply of electricity from selected generators via the grid, just as disclosed in the above embodiments. A private telecommunication network could be used, for the price signalling and negotiation, as an alternative to the public network, or alternatively the signal could be superimposed as modulations on the electricity power supply grids, which thus itself acts as a communication network.

The invention is accordingly not limited to the above described embodiments, but extends to all alterations, modifications or improvements within the spirit and scope of the invention.

We claim:

1. A communication system comprising:

at least one telecommunications resource user apparatus;

a plurality of competing telecommunications resource supplier apparatus, each selectively operable to open a respective communications circuit to said telecommunications resource user apparatus;

a signalling channel, interconnecting said telecommunications resource user apparatus and each of said plurality of telecommunications resource supplier apparatus;

a pricing device associated with each said telecommunications resource supplier apparatus and connected to the signalling channel, for detecting an attempt by a said telecommunications resource user apparatus to initiate communications and, in response to said detecting generating and transmitting through the signalling channel a respective competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the respective communications circuit, and

a selecting device, associated with the telecommunications resource user apparatus and connected to the signalling channel, for receiving each said pricing signal, and selecting a corresponding one of said transactions on the basis of said pricing signals, and signalling to the respective telecommunications resource supplier apparatus to open the respective communications circuit based upon said selection;

the pricing device and selecting device being arranged to generate and transmit a sequence of said pricing signals in a respective dialogue, to negotiate a said pricing level.

2. A communication system comprising:

at least one telecommunications resource user apparatus;

a plurality of competing telecommunications resource supplier apparatus each selectively operable to open a respective communications circuit to said telecommunications resource user apparatus;

a signalling channel, interconnecting said telecommunications resource user apparatus and each of said plurality of telecommunications resource supplier apparatus;

a pricing device associated with each said telecommunications resource supplier apparatus and connected to the signalling channel, for detecting an attempt by a said telecommunications resource user apparatus to initiate communications and, in response to said detecting, generating and transmitting through the signalling channel a respective competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the respective communications circuit; and

a selecting device, associated with the telecommunications resource user apparatus and connected to the signalling channel, for receiving each said pricing signal and selecting a corresponding one of said transactions on the basis of said pricing signals; and signalling to the respective telecommunications resource supplier apparatus to open the respective communications circuit based upon said selection;

the pricing level signals being indicative of a quantity of a payment resource representing an exchange of telecommunications services rather than money.

3. A communications system, comprising:

at least one telecommunications resource user apparatus; a plurality of competing telecommunications resource supplier apparatus, each selectively operable to open a respective communications circuit to said telecommunications resource user apparatus;

a signalling channel interconnecting said telecommunications resource user apparatus and each of said plurality of telecommunications resource supplier apparatus;

a pricing device associated with each said telecommunications resource supplier apparatus and connected to the signalling channel, for generating and transmitting through the signalling channel a respective competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the respective communications circuit, and

a selecting device, associated with the telecommunications resource user apparatus and connected to the signalling channel, for receiving each said pricing signal, and selecting a corresponding one of said transactions on the basis of said pricing signals, and signalling to the respective telecommunications resource supplier apparatus to open the respective communications circuit based upon said selection;

the or each selecting device being arranged to store data indicative of a level of performance of the resource supplied by each telecommunications resource supplier apparatus, and is for selecting a said telecommunications resource supplier apparatus based jointly upon said stored data and said pricing levels.

4. A communication system comprising:

at least one telecommunications resource user apparatus;

a plurality of competing telecommunications resource supplier apparatus, each selectively operable to open a respective communications circuit to said telecommunications resource user apparatus;

a signalling channel interconnecting said telecommunications resource user apparatus and each of said plurality of telecommunications resource supplier apparatus;

a pricing device associated with each said telecommunications resource supplier apparatus and connected to the signalling channel, for detecting an attempt by a said telecommunications resource user apparatus to initiate communications and, in response to said detecting, generating and transmitting through the signalling channel a respective competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the respective communications circuit; and

a selecting device, associated with the telecommunications resource user apparatus and connected to the signalling channel, for receiving each said pricing signal, and selecting a corresponding one of said transactions on the basis of said pricing signals; and signalling to the respective telecommunications resource supplier apparatus to open the respective communications circuit based upon said selection;

each telecommunications resource supplier apparatus being arranged to generate and transmit feature signals indicative of technical characteristics of the resource it supplies so that said selecting device can use said feature signals as a part of the selection decision process.

5. A system according to claim 4, in which the technical characteristics relate to the quality of the resource.

6. A communications system comprising :

at least one telecommunications resource user apparatus;

a plurality of competing telecommunications resource supplier apparatus, each selectively operable to open a respective communications circuit to said telecommunications resource user apparatus;

a signalling channel, interconnecting said telecommunications resource user apparatus and each of said plurality of telecommunications resource supplier apparatus;

a pricing device associated with each said telecommunications resource supplier apparatus and connected to the signalling channel, for generating and transmitting through the signalling channel a respective competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the respective communications circuit, and

a selecting device associated with the telecommunications resource user apparatus and connected to the signalling channel, for receiving each said pricing signal, and selecting a corresponding one of said transactions on the basis of said pricing signals, and signalling to the respective telecommunications resource supplier apparatus to open the respective communications circuit based upon said selection.

each telecommunications resource supplier apparatus being arranged to generate and transmit signals indicative of technical characteristics of the resource it supplies,

the selecting device being arranged for selecting a said telecommunications resource supplier apparatus based jointly upon the technical characteristics and the pricing levels.

7. The system of claim 6, in which the selecting device is arranged to calculate an arithmetic combination depending jointly upon said technical characteristics and said pricing levels, and to select said telecommunications resource supplier apparatus based upon said arithmetic combination.

8. A communications system comprising: at least one telecommunications resource user apparatus;

a plurality of competing telecommunications resource supplier apparatus, each selectively operable to open a respective communications circuit to said telecommunications resource user apparatus;

a signalling channel, interconnecting said telecommunications resource user apparatus and each of said plurality of telecommunications resource supplier apparatus;

a pricing device associated with each said telecommunications resource supplier apparatus and connected to the signalling channel, for generating and transmitting through the signalling channel a respective competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the respective communications circuit, and

a selecting device associated with the telecommunications resource user apparatus and connected to the signalling channel for receiving each said pricing signal and selecting a corresponding one of said transactions on the basis of said pricing signals, and signalling to the respective telecommunications resource supplier appa-

ratus to open the respective communications circuit based upon said selection;

the or each telecommunications resource user apparatus using telecommunications resources to supply telecommunications services to further users,

the telecommunications resource supplier apparatus and the telecommunications resource user apparatus comprise a single commonly owned and controller telecommunications network, comprising means for crediting payment to the telecommunications resource supplier apparatus from the telecommunications resource user apparatus.

9. A communication system comprising:

at least one telecommunications resource user apparatus;

a plurality of competing telecommunications resource supplier apparatus each selectively operable to open a respective communications circuit to said telecommunications resource user apparatus;

a signalling channel, interconnecting said telecommunications resource user apparatus and each of said plurality of telecommunications resource supplier apparatus;

a pricing device associated with each said telecommunications resource supplier apparatus and connected to the signalling channel, for detecting an attempt by a said telecommunications resource user apparatus to initiate communications and, in response to said detecting, generating and transmitting through the signalling channel a respective competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the respective communications circuit; and

a selecting device, associated with each telecommunications resource user apparatus and connected to the signalling channel, for receiving each said pricing signal, and selecting a corresponding one of said transactions on the basis of said pricing signals; and signalling to the respective telecommunications resource supplier apparatus to open the respective communications circuit based upon said selection;

each telecommunications resource user apparatus including customer terminal equipment for use by an individual customer and at least one of said selecting devices.

10. A system according to claim 9, in which the telecommunications resource user apparatus comprises an input device to input security data from a user, the system further comprising a memory containing stored data and being arranged to perform a security check to validate a user thereof prior to operation utilizing said security data and said stored data.

11. The system of claim 10, in which the input device is a keypad and the security data is a PIN.

12. The system of claim 9, in which the customer terminal equipment comprises a store which stores, for each resource supply transaction, the identity of the selected telecommunications resource supplier apparatus and the price level.

13. The system of claim 9, in which the customer terminal equipment comprises a cellular telephone and the signalling channel and each communications circuit include a radio channel.

14. The system of claim 9, in which the customer terminal comprises a computer work station for communicating audio, video and text data.

15. A communications system comprising:

at least one telecommunications resource user apparatus;

a plurality of competing telecommunications resource supplier apparatus, each selectively operable to open a respective communications circuit to said telecommunications resource user apparatus;

a signalling channel, interconnecting said telecommunications resource user apparatus and each of said plurality of telecommunications resource supplier apparatus;

a pricing device associated with each said telecommunications resource supplier apparatus and connected to the signalling channel, for generating and transmitting through the signalling channel a respective competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the respective communications circuit, and

a selecting device, associated with the telecommunications resource user apparatus and connected to the signalling channel, for receiving each said pricing signal, and selecting a corresponding one of said transactions on the basis of said pricing signals, and signalling to the respective telecommunications resource supplier apparatus to open the respective communications circuit based upon said selection;

the or each telecommunications resource user apparatus comprising customer terminal equipment for use by an individual customer,

the telecommunications resource user apparatus comprising an insertable and removable portion carrying at least part of said pricing device, and a receiving inlet via which the insertable and removable portion being insertable and removable by a user without dismantling the telecommunications resource user apparatus.

16. A communications system comprising:

a plurality of competing telecommunications resource user apparatus;

at least one telecommunications resource supplier apparatus which is selectively operable to open a respective communications circuit to a selected one of said telecommunications resource user apparatus;

a signalling channel, interconnecting each of said plurality of telecommunications resource user apparatus and said telecommunications resource supplier apparatus;

a pricing device associated with each said telecommunications resource user apparatus and connected to the signalling channel, for generating and transmitting through the signalling channel a respective competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the communications circuit; and

a selecting device, associated with the telecommunications resource supplier apparatus and connected to the signalling channel, for receiving each said pricing signal, and selecting a corresponding one of said telecommunications resource user apparatus on the basis of said pricing signals; and controlling the telecommunications resource supplier apparatus to open the respective communications circuit to the selected telecommunications resource user apparatus based upon said selection.

17. A system according to claim 16, in which the selecting device is arranged to transmit a sequence of signals indicative of a monotonically time-varying series of prices, and each said pricing device is arranged to receive said sequence of signals, and to transmit a pricing level acceptance signal

when a received signal indicates a price corresponding to a predetermined level.

18. A system according to claim 16, in which the or each pricing device is arranged to calculate said pricing level based upon the level of demand of its associated telecommunications resource user apparatus for the resource.

19. A system according to claim 16, in which the or each pricing device is arranged to store data indicative of previous price levels for comparable resources.

20. A system according to claim 16, in which the pricing device and selecting device are arranged to generate and transmit a sequence of said pricing signals in a responsive dialogue, to negotiate a said pricing level.

21. A system according to claim 16, in which the or each telecommunications resource user apparatus further comprises means for using telecommunications resources to supply telecommunications services to further users.

22. A system according to claim 21, in which the telecommunications resource supplier apparatus and the telecommunications resource user apparatus comprise a single commonly owned telecommunications network, further comprising means for crediting payment to the telecommunications resource supplier apparatus from the telecommunications resource user apparatus.

23. The system of claim 16, in which the selecting device transmits an initiating signal on said signalling channel prior to each resource supply transaction.

24. The system of claim 16, in which the telecommunications resource user apparatus comprises customer terminal equipment for use by an individual customer.

25. The system of claim 24, in which the customer terminal equipment comprises a cellular telephone and the signalling channel and each communications circuit includes a radio channel.

26. The system of claim 24, in which the customer terminal comprises a computer work station for communicating audio, video and text data.

27. The system of claim 16, in which the telecommunications resource user apparatus comprises an electronic payment device to transmit charging data signals, to enable credit in respect of said pricing level, via said signalling channel.

28. A telecommunications system comprising:

a telecommunications circuit provider apparatus providing a telecommunications circuit;

a telecommunications circuit user apparatus selectively connectable to said telecommunications circuit;

a first price negotiating device associated with the telecommunications circuit provider apparatus for generating and signalling a first sequence consisting of a plurality of price signals indicative of a price to be paid for use of said telecommunications circuit, and for receiving a second said sequence of said price signals;

a second price negotiating device associated with the telecommunications circuit user apparatus for generating and signalling said second sequence of price signals, and for receiving said first sequence of said price signals; and

a price signalling circuit interconnecting the first and second price negotiating devices, for carrying said price signals;

each of said negotiating devices performing an acceptance decision on the basis of a received said price signal, and signalling a further price signal in reply, whereby said first and second price signals form a responsive dialogue to negotiate a price level.

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29. The system of claim 28, in which said price signals include an acceptance signal indicating acceptance of the price indicated by the preceding price signal.

30. The system of claim 28, in which said first price negotiating device is arranged to generate said first sequence of prices as a monotonic sequence of prices, until receipt of a price signal of said second sequence indicating acceptance of the preceding price signal of said first sequence, and said second price negotiating device is arranged to perform said acceptance decision on each price signal of said first sequence and to generate said acceptance signal in response to an acceptable price.

31. The system of claim 28, in which said second price negotiating device is arranged to generate said second sequence of prices as a monotonic sequence of prices, until receipt of a price signal of said first sequence indicating acceptance of the preceding price signal of said second sequence, and said first price negotiating device is arranged to perform said acceptance decision on each price signal of said second sequence and to generate said acceptance signal in response to an acceptable price.

32. A communications system comprising:

at least one telecommunications resource user apparatus;

a plurality of competing telecommunications resource supplier apparatus, each selectively operable to open a respective communications circuit to said telecommunications resource user apparatus;

a signalling channel, interconnecting said telecommunications resource user apparatus and each of said plurality of telecommunications resource supplier apparatus;

a pricing device associated with each said telecommunications resource supplier apparatus and connected to the signalling channel, for generating and transmitting through the signalling channel a respective competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the respective communications circuit, and

a selecting device, associated with the telecommunications resource user apparatus and connected to the signalling channel for receiving each said pricing signal, and selecting a corresponding one of said transactions on the basis of said pricing signals, and signalling to the respective telecommunications resource supplier apparatus to open the respective communications circuit based upon said selection;

wherein the or each telecommunications resource user apparatus comprises customer terminal equipment for use by an individual customer,

wherein the telecommunications resource user apparatus comprises an insertable and removable portion carrying at least part of said pricing device and a receiving inlet via which the insertable and removable portion is insertable and removable by a user without dismantling the telecommunications resource user apparatus, and wherein the insertable and removable portion comprises a data-carrying card.

33. A telecommunications network comprising a first subsystem and a plurality of competing second subsystems via each of which the first subsystem may communicate, in which the second subsystems each include a price signalling circuit for signalling a price to be paid to the first subsystem and the first subsystem comprises a selecting device for selecting one of the second subsystems on the basis of the price signals, the first subsystem and the second subsystems

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comprising a single commonly owned and controlled telecommunications network, further comprising a billing system for arranging payment to the selected second subsystem from the first subsystem.

34. A control device for a telecommunications resource user apparatus, said control device comprising:

means for connecting said control device to a signalling channel,

means for generating and broadcasting, through the signalling channel to a plurality of telecommunications resource supplier apparatus having respective associated communications circuits via any of which the telecommunications resource user apparatus is selectively connectable to communicate a competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the communications circuit;

means for receiving an acceptance signal from one of said telecommunications resource supplier apparatus, and means for initiating communication via the circuit associated with that apparatus.

35. A communication system comprising:

at least one telecommunications resource user apparatus; a plurality of competing telecommunications resource supplier apparatus, each selectively operable to open a respective communications circuit to said telecommunications resource user apparatus;

a signalling channel, interconnecting said telecommunications resource user apparatus and each of said plurality of telecommunications resource supplier apparatus;

a pricing device associated with each said telecommunications resource supplier apparatus and connected to the signalling channel, for detecting an attempt by a said telecommunications resource user apparatus to initiate communications and, in response to said detecting generating and transmitting through the signalling channel a respective competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the respective communications circuit; and

a selecting device associated with the telecommunications resource user apparatus and connected to the signalling channel, for receiving each said pricing signal, and selecting a corresponding one of said transactions on the basis of said pricing signals; and signalling to the respective telecommunications resource supplier apparatus to open the respective communications circuit based upon said selection;

the telecommunications resource user apparatus including an electronic payment device to transmit charging data signals to enable credit in respect of said pricing level, via said signalling channel.

36. A method of communicating via a telecommunications network which includes at least one telecommunications service user apparatus and a plurality of competing telecommunications services suppliers each of which is selectively operable to open a respective communications channel to the telecommunications service user, the method comprising the steps of:

signalling from said telecommunications service user to each of said telecommunications service providers to indicate a requirement for telecommunications service use;

calculating and signalling, in real time response to each new indicated requirement for telecommunications ser-

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vice use, a respective price level from each of said plurality of telecommunications service providers to said telecommunications service user;

selecting, at the telecommunications service user, one of said telecommunications service providers based on said signalled price levels;

opening a communications circuit between said telecommunications service user and said selected telecommunications service provider; and

effecting payment of the price level signalled by the selected telecommunications service provider.

37. The method of claim 36 in which said step of effecting payment consists of transmitting electronic charging signals via said telecommunications network to enable crediting in respect of said price level.

38. The method of claim 36 further comprising the step of storing data representing said selected telecommunications service provider and said price.

39. A method of communicating as in claim 36 wherein said calculating and signalling step includes at least one telecommunication service provider:

signalling to further supplier apparatus, receiving price signals from said further supplier apparatus, and including said received price signals in the calculation of the pricing signal to be conveyed to the resource user apparatus.

40. A method of communicating via a telecommunications network which consists of a plurality of competing telecommunications service users and at least one telecommunications services supplier selectively operable to open a respective communications channel to each telecommunications service user, the method comprising the steps of:

signalling from said telecommunications service supplier to each of said telecommunications service users to indicate an available capacity for telecommunications service use;

signalling a respective price level from each of said plurality of telecommunications service users to said telecommunications service supplier;

selecting, at the telecommunications service supplier, one of said telecommunications service users based on said signalled price levels;

opening a communications circuit between said telecommunications service supplier and said selected telecommunications service user; and

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effecting payment of the price level signalled by the selected telecommunications service user.

41. The method of claim 40 in which said step of effecting payment consists of transmitting electronic charging signals via said telecommunications network to enable crediting in respect of said price level.

42. A communications system comprising:

at least one telecommunications resource user apparatus;

a plurality of competing telecommunications resource supplier apparatus, each selectively operable to open a respective communications circuit to said telecommunications resource user apparatus;

a signalling channel, interconnecting said telecommunications resource user apparatus and each of said plurality of telecommunications resource supplier apparatus;

a pricing device associated with each said telecommunications resource supplier apparatus and connected to the signalling channel, for detecting an attempt by a said telecommunications resource user apparatus to initiate communications and, in response to each said detecting of a new attempt to initiate communications, calculating and transmitting through the signalling channel a respective competing pricing signal indicative of a pricing level corresponding to the price to be paid for a resource supply transaction via the respective communications circuit; and

a selecting device, associated with the telecommunications resource user apparatus and connected to the signalling channel, for receiving each said pricing signal, and selecting a corresponding one of said transactions on the basis of said pricing signals, and signalling to the respective telecommunications resource supplier apparatus to open the respective communications circuit based upon said selection.

43. A communications system as in claim 42 wherein said pricing device includes:

means for signalling to further supplier apparatus, receiving price signals from said further supplier apparatus, and including said received price signals in the calculation of the pricing signal to be conveyed to the resource user apparatus.

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Case et al.

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(54) **METHOD AND APPARATUS FOR
DETECTING AND DETERRING THE
SUBMISSION OF SIMILAR OFFERS IN A
COMMERCE SYSTEM**

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(52) **U.S. Cl.** 705/26; 705/37

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(57) **ABSTRACT**

A system and method for processing buyer offers of products, to diminish the occurrence of similar, repetitive offers whereby buyers “ping” to determine a confidential floor price for the products. In one embodiment, a first offer is received from a buyer, the first offer including a plurality of offer terms each having a respective first value. A second offer is later received from the same party, the second offer including generally the same plurality of offer terms each having a respective second value. The invention operates to determine for each of the plurality of offer terms a corresponding unacceptable similarity range, and to compare the respective first values with the respective second values for each of the offer terms. If the respective first and second values for at least one of the plurality of offer terms fall within the unacceptable similarity range, a first selected process is performed on the second offer. For example, the offer may be rejected, taxed, or otherwise processed so as to discourage pinging. If the respective first and second values for the plurality of offer terms fall outside of the unacceptable similarity range, a second selected process is performed on the second offer. For example, the offer may be processed in an effort to identify a willing and able seller, in a conventional manner.

6 Claims, 10 Drawing Sheets

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	BUYER OFFER CHARACTERISTIC IDENTIFIER 603	BUYER OFFER CHARACTERISTICS 604	TERM SIMILARITY RANGE 606
602A	001	SUBMISSION DATE	WITHIN 2 DAYS OF ORIGINAL OFFER DATES
602B	002	PRICE	WITHIN \$50.00 OF ORIGINAL OFFER PRICE
602C	003	BUYER IDENTIFIER	IDENTICAL BUYER IDENTIFIERS
602D	004	PAYMENT IDENTIFIER	IDENTICAL PAYMENT IDENTIFIERS
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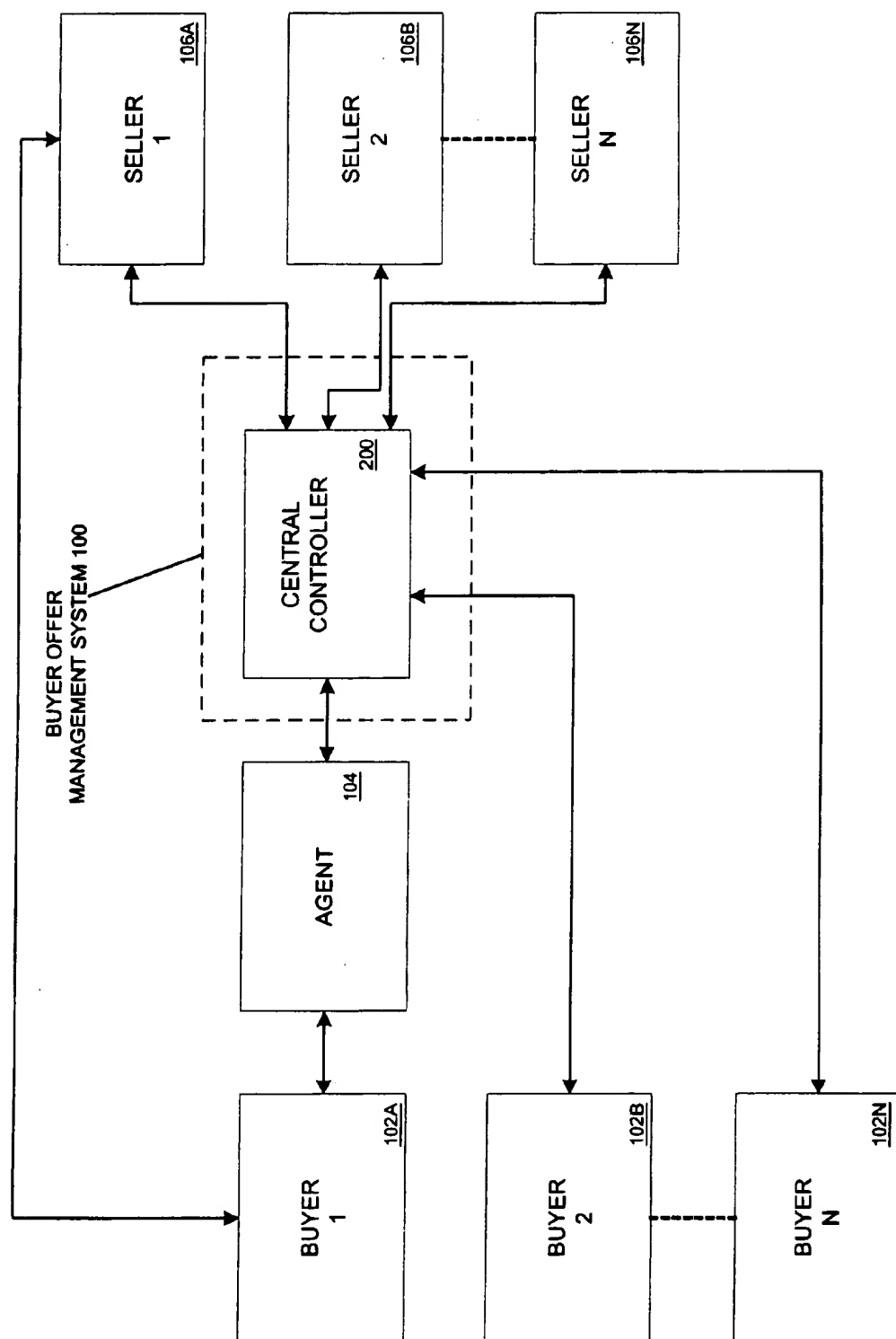


FIG. 1

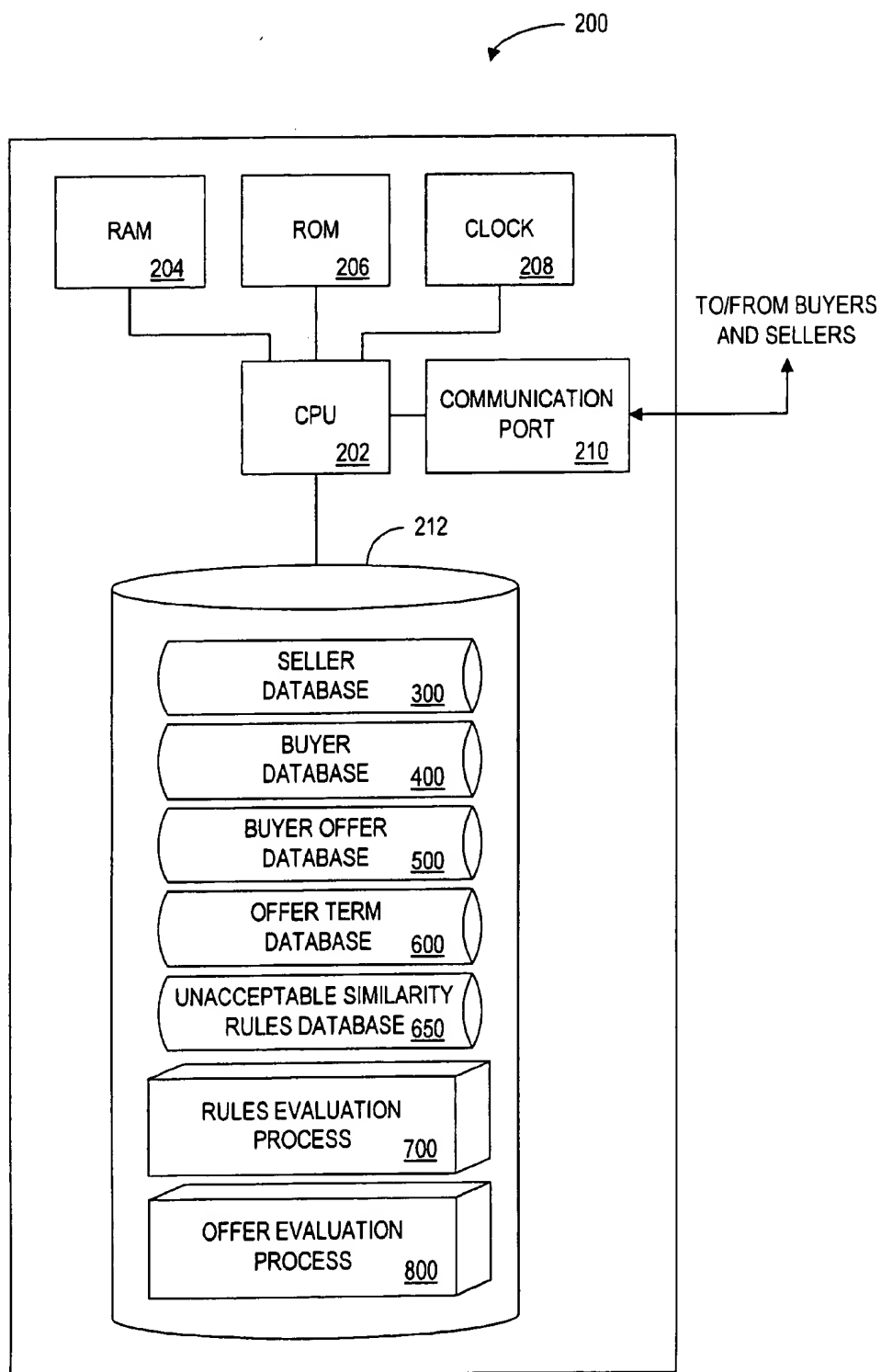


FIG. 2

300

SELLER IDENTIFIER 302	SELLER NAME 304	SELLER CONTACT INFORMATION 306	SELLER AGENT STATUS 308
1231	AIRLINE 1	E-ADDRESS#1	N
1232	AIRLINE 2	DBASEADDRESS#2	Y
1233	AIRLINE 3	E-ADDRESS#3	N
1234	AIRLINE 4	DBASEADDRESS#4	Y

300A
300B
300C
300D

FIG. 3

400

BUYER IDENTIFIER 404		FINANCIAL ACCOUNT IDENTIFIER 406	BUYER NAME 408	BUYER CONTACT INFORMATION 410
4567	402A	1111-1111-1111-1111	JOE SMITH	SMITH@ISP.COM
6789	402B	2222-2222-2222-2222	SUE JOHNSON	JOHNSON@SCHOOL.EDU

FIG. 4

500

BUYER OFFER IDENTIFIER 504	BUYER IDENTIFIER 506	BUYER OFFER CONDITIONS 508	PRICE 510	SUBMISSION DATE/TIME 512	EXPIRATION DATE/TIME 514
1	4567	-NY - LA R/T -LEAVE 1/15/98 -RETURN 1/19/98	\$200.00	1/1/98	1/14/98
2	4567	-NY - LA R/T -LEAVE 1/10/98 -RETURN 1/19/98	\$400.00	1/1/98	1/9/98
3	6789	-ORL - SF R/T -LEAVE 1/25/98 RETURN 1/29/98	\$350.00	1/1/98	1/1/98

502A

502B

502C

FIG. 5

600

BUYER OFFER CHARACTERISTIC IDENTIFIER 603		BUYER OFFER CHARACTERISTICS 604	TERM SIMILARITY RANGE 606
001	602A	SUBMISSION DATE	WITHIN 2 DAYS OF ORIGINAL OFFER DATES
002	602B	PRICE	WITHIN \$50.00 OF ORIGINAL OFFER PRICE
003	602C	BUYER IDENTIFIER	IDENTICAL BUYER IDENTIFIERS
004	602D	PAYMENT IDENTIFIER	IDENTICAL PAYMENT IDENTIFIERS
005	602E	ITINERARY	SAME CITY PAIRS

FIG. 6A

650

RULE IDENTIFIER <u>654</u>	TERM SIMILARITY RANGE IDENTIFIERS <u>656</u>
001	602C ^ 602B ^ 602E
002	602D ^ 602B ^ 602E
003	(602C v 602D) ^ (602E ^ 602A)
004	(602C v 602D) ^ 602B ^ 602E

652A
↗

652B
↗

652C
↗

652D
↗

FIG. 6B

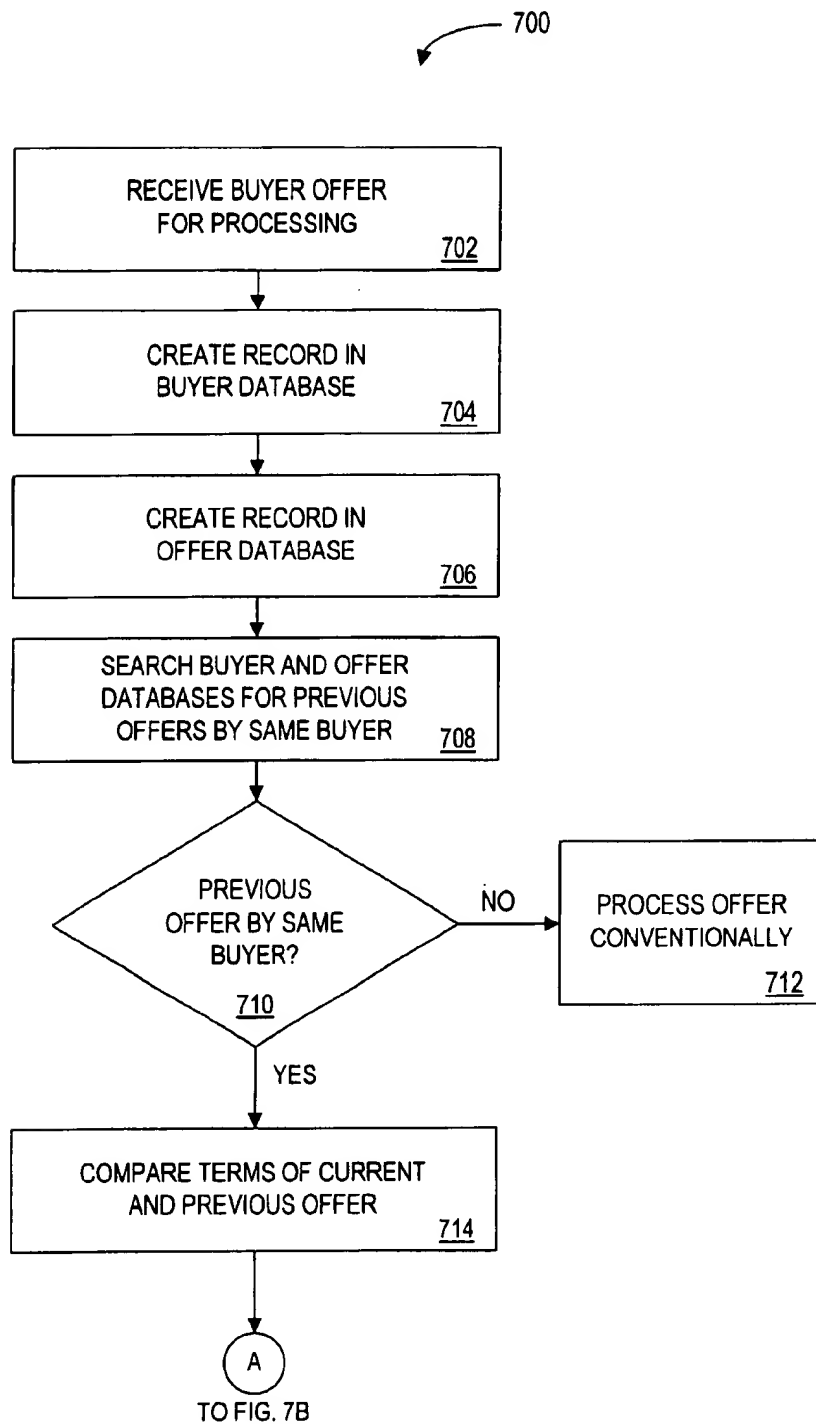


FIG. 7A

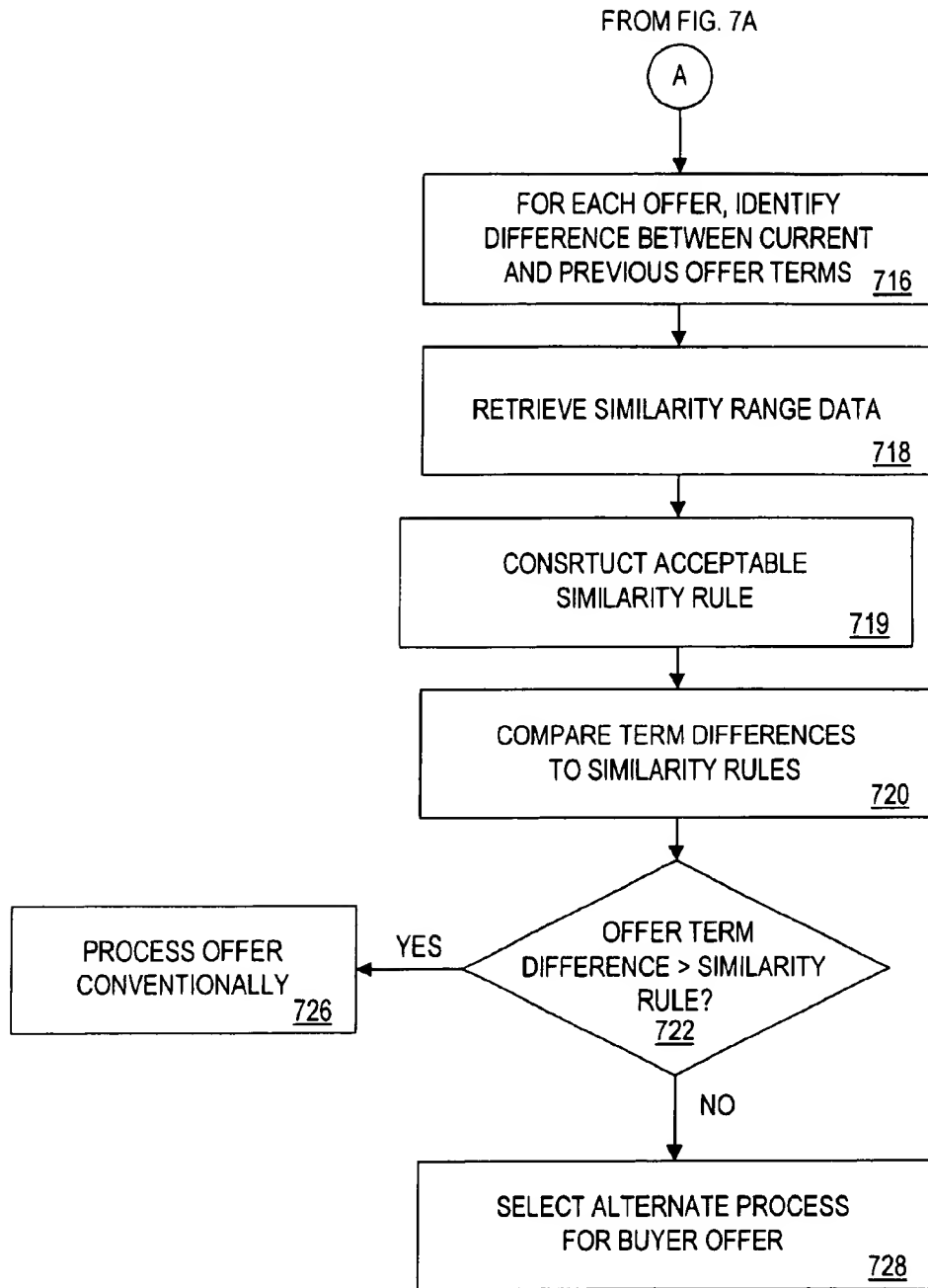


FIG. 7B

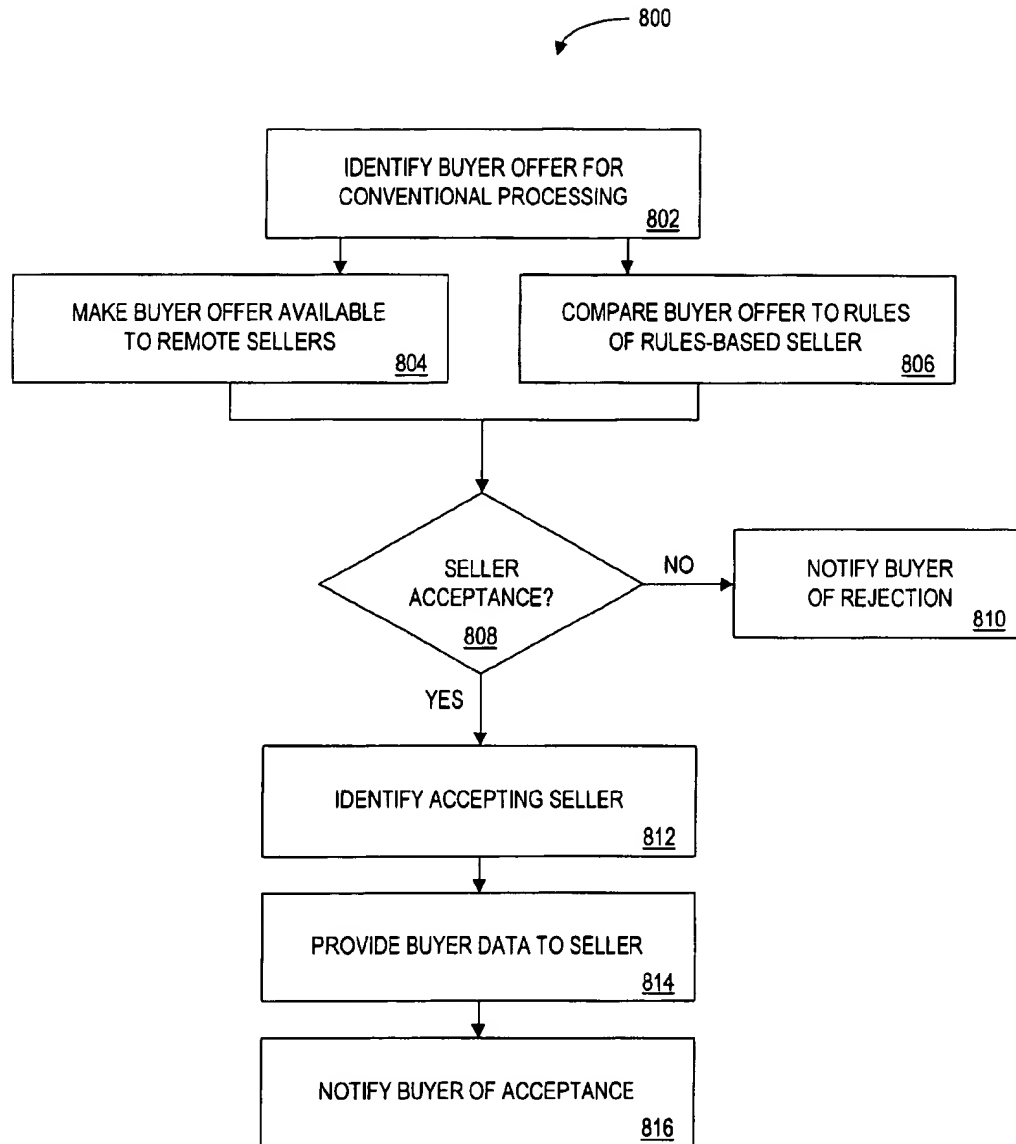


FIG. 8

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METHOD AND APPARATUS FOR DETECTING AND DETERRING THE SUBMISSION OF SIMILAR OFFERS IN A COMMERCE SYSTEM

The present application is a continuation-in-part of U.S. patent application Ser. No. 09/205,824 filed Dec. 4, 1998, which is a continuation-in-part of U.S. patent application Ser. No. 08/943,483 filed Oct. 3, 1997, which is a continuation-in-part of U.S. patent application Ser. No. 08/923,683 filed Sep. 4, 1997, which is a continuation-in-part of U.S. patent application Ser. No. 08/889,319, filed Jul. 8, 1997, which is a continuation-in-part of U.S. patent application Serial No. 08/707,660, filed Sep. 4, 1996, now issued U.S. Pat. No. 5,794,207, each of which is incorporated in its entirety by reference herein.

FIELD OF THE INVENTION

The present invention relates generally to commerce systems, and more particularly to a commerce system that discourages buyers from submitting repetitive offers for a product to determine a selling price.

BACKGROUND OF THE INVENTION

Most conventional systems for selling products are seller-driven commerce systems, wherein a seller establishes conditions, including price, for the sale of a product, and buyers determine whether or not to purchase that product. Examples of seller-driven commerce systems include conventional retail systems, both in a traditional store environment, and in an electronic environment as established on the Internet. Amazon.com, for example, is representative of a traditional seller-driven commerce system, i.e. a bookstore, that has been implemented electronically on the Internet. It is the applicant's belief that the vast majority of consumer sales are transacted using the seller-driven model.

A heretofore less common method of selling products is buyer-driven commerce, where a buyer creates an offer setting the terms and conditions of a potential purchase. The buyer offer is made available to many sellers, for example through a paper or electronic 'want ad,' and interested sellers may contact the buyer to complete the transaction.

While much infrastructure has long been established to support seller-driven commerce, buyer-driven commerce represents a somewhat newer, lesser used type of commerce having much less supporting infrastructure. Prior to the existence of electronic networks such as the Internet, and certain business models developed thereunder, applicant's believe no cost-effective infrastructure existed for supporting buyer-driven commerce systems. Facilities for supporting seller-driven commerce include, for example, highly-effective advertising channels, automated payment processing systems, established and readily available fulfillment systems, and other similar facilities for supporting steps of the seller-driven sales process. In contrast, many of the analogous facilities necessary to support buyer-driven commerce do not exist on the same established, economically feasible and effective scale.

Communications and advertising channels through which buyers may reach sellers are not, for example, as well established and effective as are the communications and advertising channels available for sellers to reach buyers. Similarly, it is typically more difficult and time-consuming for a seller to contact a buyer, consummate a transaction, and collect a payment based on a buyer-driven offer, than it is for a seller to perform these same functions in a more traditional

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seller-driven commerce environment. The development of electronic networks, as well as the invention of new commerce models and infrastructures using these networks, have moved towards making the process of buyer-driven commerce more practical and economically feasible on a large-scale basis.

Priceline.com Incorporated of Stamford, Conn. is a merchant that has successfully implemented a buyer-driven commerce system for the sale of products such as airline tickets, hotel accommodations, and automobiles. Priceline.com utilizes a Conditional Purchase Offer (CPO) Management System, described in U.S. Pat. No. 5,794,207 and International Application Number PCT/US97/15492, that processes buyer-generated conditional purchase offers (CPOs) received from individual consumers. These CPOs contain one or more buyer-defined conditions for the purchase of goods or services, at a buyer-defined price. They may be guaranteed by a general purpose account, such as a debit or credit card account, thereby providing sellers with a mechanism for collecting payments on accepted CPOs. The CPO Management System operates to automatically process CPOs for potential fulfillment by a seller. Automated processing systems developed by priceline.com make the buyer-driven commerce system cost-effective on a large scale. The potential to receive customer offers backed by credit cards, i.e. "guaranteed demand", makes the system very effective for sellers. If a seller accepts a CPO, the CPO Management System may bind the buyer on behalf of the accepting seller, to form a legally binding contract between the parties.

The CPO Management System thus empowers individual consumers to obtain goods and services at their own specified prices. The CPO Management System provides numerous commercial advantages to sellers as well. For example, certain features of the system, including anonymity and data security, enable the seller to adjust his price and terms to meet a consumer offer without publicly undercutting his own retail price structure. This enables the seller to identify and accept incremental, price-sensitive sales in a manner not typically feasible through a conventional retail process.

In many implementations of the above-described buyer-driven commerce system, it is important that a seller's lowest price, or floor price, remain a secret from the buyer. If the general buyer population discovers the seller's floor price, then there is no incentive for any buyer to offer a reasonable price for those products. Every buyer will eventually offer only the floor price, the seller's traditional retail prices and distribution channels will be undercut, and that seller may suffer or fail in the marketplace. Further, public knowledge of a seller's floor price will enable his competitors to determine his profit margins on particular goods, providing his competitors with an unfair advantage and an opportunity to undercut his position in the market.

One problem foreseen by the inventors is the likelihood that buyers (including competitors) may attempt to determine a seller's lowest price is to 'ping' the system by submitting repetitive offers to the system with incrementally increasing prices. For example, if a buyer believes a seller's floor price to be in the range of ten to fifteen dollars for a particular product, he may submit a first offer at nine dollars. If that offer is rejected, he would then submit subsequent offers, increasing the offer price incrementally (for example by one dollar), until an offer is accepted. At that time, the buyer knows the seller's lowest price, and may communicate that price to competitors and to other potential buyers.

The present inventors have thus determined that, in order for at least some methods of buyer-driven commerce to

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operate successfully, it is necessary to develop methods and systems for preventing buyers from determining lowest available seller prices. It is particularly desirable to prevent buyers from pinging the system to make such a determination.

SUMMARY OF THE INVENTION

A principle object of the present invention is to provide a system and method whereby buyer users of a buyer-driven commerce system are effectively discouraged from submitting repetitive offers in an effort to determine a lowest seller price for a particular product.

In accordance with a first embodiment of the present invention, there is provided a system and method of processing offers for the purchase of products, the method comprising the steps of: receiving from a party at least first and second offers for a product; comparing the first and second offers; and if the first and second offers fall within a predetermined range of similarity, then performing a first selected process on at least one of the first and second offers.

In accordance with another aspect of the invention, there is provided a system and method of processing offers for the purchase of products, the method comprising the steps of: receiving from a party a first offer, the first offer including a plurality of offer terms each having a respective first value; receiving from the party a second offer, the second offer including the plurality of offer terms each having a respective second value; determining for each of the plurality of offer terms a corresponding unacceptable similarity range; comparing the respective first values with the respective second values for each of the offer terms; and performing, if the respective first and second values for at least one of the plurality of offer terms fall within the unacceptable similarity range, a first selected process on the second offer.

In accordance with yet another embodiment of practicing the invention, there is provided a system and method of processing offers for the purchase of products, the method comprising the steps of: receiving from a party a first conditional purchase offer, the first conditional purchase offer including a plurality of offer terms each having a respective first value; receiving from the party a second conditional purchase offer, the second conditional purchase offer including the plurality of offer terms each having a respective second value; the plurality of offer terms including a condition, a purchase price, a payment identifier, and an authorization to use the payment identifier to pay the purchase price; determining for each of the plurality of offer terms an unacceptable similarity range; comparing the respective first values with the respective second values for each of the offer terms; if the respective first and second values for at least one of the plurality of offer terms fall within the unacceptable similarity range, performing a first process on the second offer; and if the respective first and second values for the plurality of offer terms do not fall within the unacceptable similarity range, performing a second process on the second offer.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

These, and other objects, features and advantages of the invention will become apparent from a consideration of the detailed description below, in which:

FIG. 1 is a block diagram of a CPO Management System in accordance with the invention;

FIG. 2 is a block diagram of the central controller of FIG. 1;

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FIG. 3 is a table showing the data contents of an exemplary seller database;

FIG. 4 is a table showing the data contents of an exemplary buyer database;

FIG. 5 is a table showing the data contents of an exemplary buyer offer database;

FIG. 6A is a table showing the data contents of an exemplary offer similarity range database;

FIG. 6B is a table showing the data contents of an exemplary unacceptable similarity rules database;

FIGS. 7A&B together show a flow chart showing an exemplary rules evaluation process; and

FIG. 8 is a flow chart showing an exemplary CPO evaluation process.

DETAILED DESCRIPTION OF THE INVENTION

The present invention has application in the field of buyer-driven commerce, used herein to described methods of commerce wherein buyers assemble and submit offers to sellers, the sellers having the opportunity to consider and fill the offer. Fulfillment typically occurs after discussions with the buyer, during which payment mechanisms and fulfillment terms (i.e. delivery) are agreed to. One traditional method of buyer-driven commerce is the 'want ad,' which may be implemented today both electronically and in paper publications.

The present invention is operative to discourage buyer efforts to determine confidential price floors set by sellers. The invention is particularly effective in discouraging "pinging," used herein to describe a method whereby users of a system repetitively interact with that system in order to determine confidential information relating to the system. Such interactions can be on a large-scale basis, for example in the millions of interactions, in attempts to determine cryptographic protocols. The present invention is particularly concerned with the submission of repetitive buyer offers to a buyer-driven commerce system in order to attempt to determine a confidential price floor of a seller.

An important subset of buyer-driven commerce is the priceline.com model using conditional purchase offers (CPOs). A conditional purchase offer is a buyer offer that contains at the least a buyer-specified condition for the purchase of a product, and a buyer-specified price. A conditional purchase order desirably has some financial obligation on the part of the buyer associated with it, for example a penalty for failure to execute on an offer accepted by a seller. A conditional purchase offer may also be binding, wherein a buyer at the time of offer commits to pay his offer price if a seller accepts the offer. Binding CPOs are typically guaranteed with a financial account identifier, for example a credit or debit card account number. The inclusion of a payment guarantee raises the buyer offer, or demand unit, to the level of "guaranteed demand," making the offer less risky and hence more cost-effective for a seller to consider.

Other features that are applicable to the CPO model include the provision of anonymity to a seller, and the provision of flexible terms and conditions in the buyer's CPO. By making the seller's identity anonymous, at least until the seller accepts an offer, sellers may participate in the system with a much diminished concern about undercutting their own retail structure. By requiring the buyer offer to include flexible terms, terms that may be specified by the seller (i.e. delivery date, quality, brand name, etc. . . .), the seller is again given the ability to fill the offer with lessened concern about undercutting their own retail structure.

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Referring now to FIG. 1, there is shown a buyer offer management system 100 including a central controller 200 for communicating buyer offers and buyer offer-related information with a plurality of buyers 102A-102N, and communicating buyer offer and seller acceptance-related information with a plurality of sellers 106A-106N. Buyer offers and related information may be communicated by any appropriate means, for example, through an electronic network, by telephone, or by mail. Buyer offers may be received directly from a buyer, or through an agent 104 on behalf of a buyer, the agent shown herein as operating with buyer 102A.

In the described embodiment, buyers communicate with central controller 200 electronically via the Internet, and the central controller in turn communicates with sellers through an appropriate electronic data interface. Buyers 102A-102N would thus communicate with central controller 200 using an appropriate electronic terminal, for example a personal computer. Sellers 106A-106N likewise communicate with the central controller 200 through an appropriate computer, for example a personal computer, a server, or a main-frame computer. As will be discussed further below, selected sellers receive buyer offers directly from central controller 200, while other sellers provide agency-based rules for use by the central controller to itself evaluate buyer offers on behalf of such sellers.

With reference now to FIG. 2, central controller 200 is seen to comprise a generally conventional computer, including a central processing unit (CPU) 202 connected to random access memory 204, read-only memory 206, and a clock 208. CPU 202 is further connected to a communications port 210, such as a modem or a network interface, and a storage device 212. Storage device 212 can comprise, for example, a conventional combination of magnetic, optical, and/or semiconductor memory.

In accordance with the present invention, storage device 212 is seen to include a seller database 300, a buyer database 400, an offer database 500, an offer term database 600, and an unacceptable similarity rules database 650, each of which is described in further detail below. Storage device 212 further includes software instructions for performing a rules evaluation process 700 and an offer evaluation process 800, each of which are also described in further detail below. Central controller 200 further includes those standard hardware and software components necessary to the operation of a computer, as are well known to those of ordinary skill in the art.

Referring now to FIG. 3, seller database 300 is seen to include four data records, indicated at 300A-300D. Each data record includes four data fields: a seller identifier field 302 containing an identifier assigned by central controller 200, a seller name field 304 including an alpha-numeric seller name, a seller contact information field 306 indicating an address or other method of communicating information with a seller, and a seller agent status field 308 indicating whether the seller has provided rules for local evaluation of a buyer offer by the central controller. Examining, for example, record 300A, Airline 1 is seen to be associated with identifier 1231 and to have an electronic contact address of 'E-ADDRESS#1'. The seller agent status is "no," indicating the seller has not provided rules for local evaluation of buyer offers, and is thus to have direct access to buyer offers in the manner described below. In contrast, Airline 2 as identified in data record 300B is seen to have provided buyer offer evaluation rules, which are available for use at a local database address "DBASE-ADDRESS#2." Though not shown, an external contact address or information may also be provided for Airline 2.

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With reference now to FIG. 4, there is shown buyer database 400 including two data records 402A, 402B, each including four fields: a buyer identifier field 404 including an identifier either generated by central controller 200 or provided by a buyer (e.g. a social security number), a financial account identifier field 406 including a financial account identifier such as a credit or debit card number provided by the buyer, a buyer name field 408, and a contact information field 410 including buyer contact information. Examining, for example, record 402A, buyer Joe Smith is seen to have been assigned identifier 4567, to have provided credit card number 1111-1111-1111-1111 as a financial account identifier, and to have an electronic mail address of smith@aisp.com.

Referring now to FIG. 5, buyer offer database 500 is seen to include three data records 502A-502C. Each record is seen to include six data fields: a buyer offer identifier field 504 generated by central controller 200, a buyer identifier field 506 which corresponds to the buyer identifier in buyer database 400, a buyer offer conditions field 508 including conditions specified by the buyer, a price field 510 including a buyer-specified price, a submission date/time field 512 including the submission date of the buyer offer, and an expiration date/time field 514 including any buyer offer expiration date assigned by central controller 200 or by the buyer. Examining, for example, data record 502A, buyer offer "1" is seen to correspond to buyer "4567." The conditions are for an airline ticket: round-trip from New York to Los Angeles, leaving on "1/15/98" and returning on "1/19/98." The buyer-specified offer price is "\$200," the date of submission of the buyer offer is "1/1/98," and the expiration date is "1/14/98." It is to be noted that data record 502B includes a second offer by the same buyer, this second offer having a changed departure date, price, and expiration date.

With reference now to FIG. 6A, offer term database 600 stores unacceptable similarity ranges for selected offer terms, and is seen to include five records 602A-602E, each including three fields: an identifier field 603 constituting an index assigned by the system, a buyer offer characteristic field 604 including data identifying a buyer offer term, and a term similarity range field 606 containing a range for the corresponding term within which similar buyer offers may, in accordance with the rules described below, be rejected or differently processed. Examining, for example, data record 602A, it is seen that identifier "001" indexes buyer offer dates (field 604) submitted within two days of one-another (field 606).

Referring now to FIG. 6B, unacceptable similarity rules database 650 identifies selected combinations of term similarity ranges from database 600 which together are used to identify types of buyer offers which are to be rejected or otherwise differently processed. Database 650 is seen to include four records, 652A-D, each including two fields: a rule identifier field 654 constituting a rule number assigned by the system, and a term similarity range identifiers field 656 identifying, in Boolean logic format, what combination of term similarity ranges from field 606 of database 600 comprise an unacceptable buyer offer. That is, term similarity range identifiers 656 are used, in accordance with the processes set out and described below, to identify those buyer offers which are similar in nature and thus are likely to be operative to ping the system to identify price floors, so that such similar offers can be rejected or otherwise separately processed.

Examining in detail the rules set out in database 650, the rules identified in record 652A for identifier 001 are seen to

identify a Boolean combination of terms from database 600. More specifically, the similarity range identifiers in this first rule are seen to identify the following combination of fields: 602C (and) 602B (and) 602E as constituting an unacceptable offer. Considering the corresponding term similarity range information from database 600, rule "001" is seen to identify offers that have: identical buyer identifiers (and) offers within \$50.00 of one-another, (and) the same city pair. The remaining rules from database 650 are similarly examined in Table 1 below.

TABLE 1

Unacceptable Rule Identifier	Term Similarity Range Identifiers
002	identical payment identifiers (and) prices within \$50.00 (and) same city pairs
003	(identical buyer identifiers (or) identical payment identifiers (and) (same city pairs (and) offers received within two days of one-another)
004	(identical buyer identifiers (or) identical payment identifiers (and) (offer prices within \$50.00 (and) same city pairs)

For purposes of illustration and explanation, other combinations of offer terms that may identify system pings include, without limitation, two offers that are unacceptably similar in the range of: 1) dates and offer prices, 2) for an airline ticket, dates and itineraries, 3) for consumer products, offer prices and product specifications, 4) for consumer products, offer prices and brand specifications, 5) for hotel room accommodations, dates and locations, 6) for hotel room accommodations, locations and offer prices, 7) for financial products, financial terms and offer prices, 8) for airline tickets, date, itinerary and offer price, 9) for hotels, date, location, and offer price, 10) for hotels, date, location, offer price, and hotel rating, etc. It will be apparent to those skilled in the art that many different combinations of terms may be identified which would indicate that two related offers are functional to determine a confidential price floor, and upon the occurrence of unacceptably similar ranges for those terms, the second offer should be processed by an alternative process.

Referring now to FIG. 7A, a process 700 for utilizing the similarity rules in database 650 to determine how to process a buyer offer is shown, the first step 702 comprising receiving a buyer offer for processing. As described with respect to FIG. 1, in the present embodiment, the buyer offer is received into central controller 200 through an Internet communication. The buyer offer may include, for example, product specifications, fulfillment terms and conditions, and/or an offer price. It will be understood that the content of the buyer offer is particularly relevant to the present invention in its relation to previously submitted offers, more so than to the absolute contents of a particular offer. It will be further understood that, in the described embodiment, it is a rule requirement that compared offers are by the same buyer. As described above, this same buyer requirement is not necessary to all applications of the present invention.

The information contained in the received buyer offer is used to create a buyer record in buyer database 400 (step 704) and an offer record in offer database 500 (step 706). A search is then made of the buyer and offer databases to determine if a previous offer has been received from the same buyer (step 708).

It will be understood that one purpose of the present invention is to prevent pinging by a buyer(s) to determine a seller price floor. Accordingly, the terms "buyer," and/or

"party," and/or equivalents, when used to refer to an entity capable of pinging the system to determine pricing information, may be identified in many different ways, including: the same (or a recognizably similar variation of) a: name, address, financial account identifier, telephone number, and/or geographic location (as may be determined, for example, by a global positioning system, telephone number, zip code, or the like). Other criteria for determining the existence of the "same" buyer may include the existence of a central controller-placed 'cookie' on a buyer's computer, and in appropriate circumstances similar offer terms and conditions such as product amenities, dates of offers, and/or price. Again, it will be understood that for the purpose of the present invention, a "buyer" is an entity who might repetitively ping central controller 200 to determine a floor price.

Many other criteria will be apparent to those skilled in the art by which such a buyer may be identified. It will be seen that, for purposes of illustration and explanation, two "same buyer" identifiers are set out in database 600: the same buyer identifier in field 602C, which may comprise, for example, the same buyer name or same buyer account identifier, and the same payment identifier as set out in field 602D, for example the same credit card account number.

If no previous offer has been received from the same buyer (step 710), the buyer offer is processed conventionally according to the steps set out in FIG. 8, described below (step 712).

If a previous offer has been received from the same buyer (step 710), then the rules in the similarity rules database are used to determine if the newly received offer is unacceptably similar in scope to the previous offer. This process is initiated by comparing the terms of the newly received offer to the terms of the previously received offer (step 714).

With reference now to FIG. 7B, for each offer, the difference between the current offer terms (excepting the buyer identifiers, which have been compared above) and the previous offer terms is determined (step 716). For purposes of explanation, if the terms being compared are price, the monetary difference between the prices of the current and previous offers are calculated. If the terms being compared are the buyer-requested date of service, the length of time between term dates is calculated. If product brands are specified, the product brand terms may be compared to determine if the specified brand has been altered. Appropriate difference ranges are determined for all selected offer terms, which may further include: offer dates, product specifications, fulfillment terms and conditions, specifications of selected sellers, etc.

For each buyer offer, the term similarity range identifiers, in Boolean form, are retrieved from field 656 of database 650, and used to retrieve the corresponding term similarity range data from field 606 of database 600 (step 718). This retrieved range data is used to construct the unacceptable similarity rule for the particular offer (step 719). It will be understood that different unacceptable similarity rules may be used for different business circumstances, depending on the particular rule identifier selected to index a record in database 650. Such decisions are to be determined by the system operator, and may be based on, for example, types of products being sold and/or business goals of the system operator and/or sellers. The actual difference between the current and previous offer terms are then compared to the unacceptable similarity rule data (step 720). If the actual offer term difference is outside of the unacceptable similarity rule range (step 722), i.e. the current offer is acceptable and

not identified as a ping, then the current buyer offer is processed conventionally (step 726).

If the buyer offer test at step 722 is determined as having an unacceptable similarity to a previous offer, i.e. the offer term differences fall within the unacceptable similarity rule, then an alternate process is selected for the current buyer offer (step 728). In the described embodiment, the alternate process is to reject the current offer, thereby preventing pinging. It will be understood that other alternate processes may be selected which will also prevent or discourage pinging, such as: charging a surcharge to process the current offer, providing a warning to the buyer that this is the last similar offer that will be processed, and/or suspending future privileges of the buyer to use the system. Many other methods of processing such an offer while discouraging and preventing pinging will now be apparent to those of ordinary skill in the art.

With reference now to FIG. 8, a conventional process is shown for processing buyer offers that do not include unacceptably similar terms as determined by the similarity rules process 700 described above. To initiate process 800, a buyer offer is identified for conventional processing (step 802). That buyer offer is made available to remote sellers (also termed 'broadcast-based' sellers) (step 804) and compared to rules provided by rules-based sellers (also termed 'agency-based' sellers) (step 806). The step of making such an offer available to remote sellers may include, for example, transmitting the offer to the remote sellers electronically or by paper, and/or making the offer available for viewing by remote sellers, such as on an Internet website. The step of comparing such an offer to rules includes comparing the terms of the offer to rules of acceptance provided by a seller(s) for local processing and acceptance. Such rules, for example, may be collected and stored in a database in central controller 200.

It is next determined if any seller accepts the buyer offer (step 808). If neither of steps 804 or 806 identify an accepting seller, then the buyer is notified with a rejection of the offer (step 810). If an acceptance by a seller is identified in step 808, then the accepting seller is identified (step 812) and provided with the necessary buyer data (step 814). The buyer is likewise notified (step 816) of the acceptance, and provided necessary information relating to the seller.

There has thus been provided a new and improved method and system for processing buyer offers in a commerce system, and particularly in a buyer-driven commerce system, which discourages and/or prevents buyer pinging (i.e. the submission of multiple similar offers) to determine a seller floor price. The invention has application in buyer-driven commerce systems, and particularly in systems such as those provided by priceline.com. The invention is flexible enough to detect many different types of potential pinging strategies, and can be implemented so that it does not require undue resources.

While the present invention has been shown and described with respect to specific embodiments, it is not thus limited. Numerous modifications, changes and improvements falling within the scope of the invention will occur to those skilled in the art.

What is claimed is:

1. A method of using a computer to process offers for the purchase of products, comprising:

receiving from a party a first conditional purchase offer via said computer, said first conditional purchase offer including a plurality of offer terms each having a respective first value;

receiving from said party a second conditional purchase offer, said conditional purchase offer including said plurality of offer terms each having a respective second value;

said plurality of offer terms including a condition, a purchase price, a payment identifier, and an authorization to use said payment identifier to pay said purchase price;

determining for each of said plurality of offer terms an unacceptable similarity range;

comparing said respective first values with said respective second values for each of said offer terms;

if said respective first and second values for at least one of said plurality of offer terms fall within said unacceptable similarity range, performing a first process on said second offer; and

if said respective first and second values for said plurality of offer terms do not fall within said unacceptable similarity range, performing a second process on said second offer, wherein performing a second process comprises transmitting said second offer to a plurality of sellers.

2. A method of using a computer to process offers for the purchase of products, comprising:

receiving from a party a first conditional purchase offer via said computer, said first conditional purchase offer including a plurality of offer terms each having a respective first value;

receiving from said party a second conditional purchase offer, said conditional purchase offer including said plurality of offer terms each having a respective second value;

said plurality of offer terms including a condition, a purchase price, a payment identifier, and an authorization to use said payment identifier to pay said purchase price;

determining for each of said plurality of offer terms an unacceptable similarity range;

comparing said respective first values with said respective second values for each of said offer terms;

if said respective first and second values for at least one of said plurality of offer terms fall within said unacceptable similarity range, performing a first process on said second offer; and

if said respective first and second values for said plurality of offer terms do not fall within said unacceptable similarity range, performing a second process on said second offer, wherein performing a second process comprises querying a database to determine seller information.

3. A method of using a computer to process offers for the purchase of products, comprising:

receiving from a party a first conditional purchase offer via said computer, said first conditional purchase offer including a plurality of offer terms each having a respective first value;

receiving from said party a second conditional purchase offer, said conditional purchase offer including said plurality of offer terms each having a respective second value;

said plurality of offer terms including a condition, a purchase price, a payment identifier, and an authorization to use said payment identifier to pay said purchase price;

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determining for each of said plurality of offer terms an unacceptable similarity range;
 comparing said respective first values with said respective second values for each of said offer terms;
 if said respective first and second values for at least one of said plurality of offer terms fall within said unacceptable similarity range, performing a first process on said offer, wherein performing a first process comprises using said payment identifier to charge said party a fee for processing said second offer; and
 if said respective first and second values for said plurality of offer terms do not fall within said unacceptable similarity range, performing a second process on said second offer.

4. A system for processing offers for a purchase of products, comprising:
 a processor;
 a memory connected to said processor and storing instructions for controlling said processor, said processor operative with said instructions to
 receive from a party a first conditional purchase offer, said first conditional purchase offer including plurality of offer terms each having a respective first value;
 receive from said party a second conditional purchase offer, said second conditional purchase offer including said plurality of offer terms each having a respective second value;
 said plurality of offer terms including a condition, a purchase price, a payment identifier, and an authorization to use said payment identifier to pay said purchase price;
 determine for each of said plurality of offer terms an unacceptable similarity range;
 compare said respective first values with aid respective second values for each of said offer terms;
 if said respective first and second value for at least one of said plurality of offer terms fall within said unacceptable similarity range, perform a first process on said second offer; and
 if said respective first and second value for said plurality of offer terms do not fall within said unacceptable similarity range, perform a second process on said second offer, wherein performing a second process comprises transmitting said second offer to a plurality of sellers.

5. A system for processing offers for a purchase of products, comprising:
 a processor;
 a memory connected to said processor and storing instructions for controlling said processor, said processor operative with said instructions to
 receive from a party a first conditional purchase offer, said first conditional purchase offer including plurality of offer terms each having a respective first value;

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receive from said party a second conditional purchase offer, said second conditional purchase offer including said plurality of offer terms each having a respective second value;
 said plurality of offer terms including a condition, a purchase price, a payment identifier, and an authorization to use said payment identifier to pay said purchase price;
 determine for each of said plurality of offer terms an unacceptable similarity range;
 compare said respective first values with aid respective second values for each of said offer terms;
 if said respective first and second value for at least one of said plurality of offer terms fall within said unacceptable similarity range, perform a first process on said second offer; and
 if said respective first and second value for said plurality of offer terms do not fall within said unacceptable similarity range, perform a second process on said second offer, wherein performing a second process comprises querying a database to determine seller information.

6. A system for processing offers for a purchase of products, comprising:
 a processor;
 a memory connected to said processor and storing instructions for controlling said processor, said processor operative with said instructions to
 receive from a party a first conditional purchase offer, said first conditional purchase offer including plurality of offer terms each having a respective first value;
 receive from said party a second conditional purchase offer, said second conditional purchase offer including said plurality of offer terms each having a respective second value;
 said plurality of offer terms including a condition, a purchase price, a payment identifier, and an authorization to use said payment identifier to pay said purchase price;
 determine for each of said plurality of offer terms an unacceptable similarity range;
 compare said respective first values with aid respective second values for each of said offer terms;
 if said respective first and second value for at least one of said plurality of offer terms fall within said unacceptable similarity range, perform a first process on said second offer, wherein performing a first process comprises using said payment identifier to charge said party a fee for processing said second offer; and
 if said respective first and second value for said plurality of offer terms do not fall within said unacceptable similarity range, perform a second process on said second offer.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,510,418 B1
DATED : January 21, 2003
INVENTOR(S) : T Scott Case et al.

Page 1 of 1

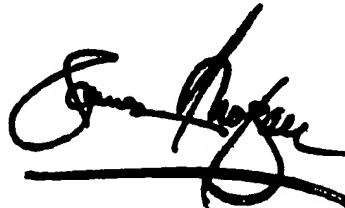
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 6,

Line 14, please delete "smith@aisp.com" and insert therefor -- smith@isp.com --

Signed and Sealed this

Eighteenth Day of March, 2003

A handwritten signature in black ink, appearing to read "James E. Rogan", with a long horizontal flourish extending from the bottom of the signature.

JAMES E. ROGAN
Director of the United States Patent and Trademark Office



US006041308A

United States Patent [19]
Walker et al.

[11] **Patent Number:** **6,041,308**
 [45] **Date of Patent:** **Mar. 21, 2000**

[54] **SYSTEM AND METHOD FOR MOTIVATING
 SUBMISSION OF CONDITIONAL
 PURCHASE OFFERS**

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[73] Assignee: **priceline.com Incorporated**, Stamford, Conn.

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[21] Appl. No.: **09/205,787**

[22] Filed: **Dec. 4, 1998**

Related U.S. Application Data

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[51] Int. Cl.⁷ **G06F 19/00**

[52] U.S. Cl. **705/14; 705/26; 705/1**

[58] Field of Search **705/14, 1, 5, 13, 705/15, 26, 27, 37, 35, 38; 295/226, 228, 236, 237, 239; 340/825.3**

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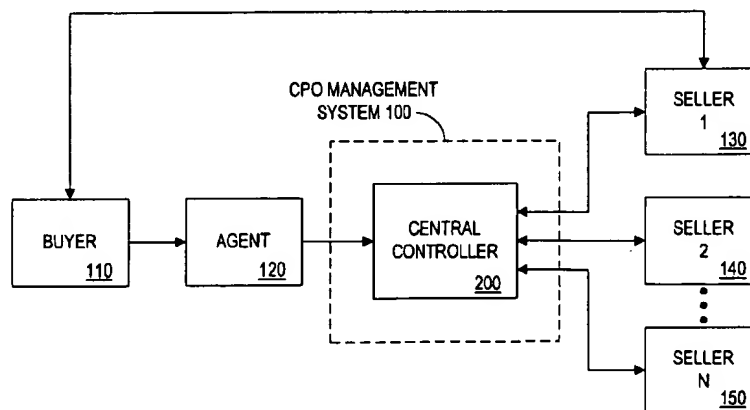
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Primary Examiner—Allen R. Macdonald
Assistant Examiner—Penny Caudle
Attorney, Agent, or Firm—Morgan & Finnegan LLP; Jeffrey L. Brandt

[57] ABSTRACT

A system and method are disclosed for encouraging buyers to submit CPOs to a CPO management system for a desired product. The CPO management system processes each received CPO to determine whether one or more sellers are willing to accept a given CPO. The disclosed CPO management system compensates buyers if the buyer's conditional purchase offer is rejected, or expires before an acceptance is received. If a CPO is rejected by the sellers, or has expired before an acceptance is received, the CPO management system evaluates one or more stored compensation offers to determine if the buyer is eligible for rejection compensation. The compensation offers may optionally require that the conditional purchase offer satisfies one or more additional predefined eligibility criteria. If the predefined criteria is met, the rejection compensation is provided to the buyer. The rejection compensation can include, for example, (i) a cash award, (ii) a prize, or (iii) a coupon or credit that may be redeemed for a discount against future transactions, thereby encouraging future use.

71 Claims, 10 Drawing Sheets



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- The United Computer Exchange: How It All Works, selected pages downloaded from www.uce.com.
- Tired of Shopping For the Best Home Loan?, Mortgage Loan Specialists.

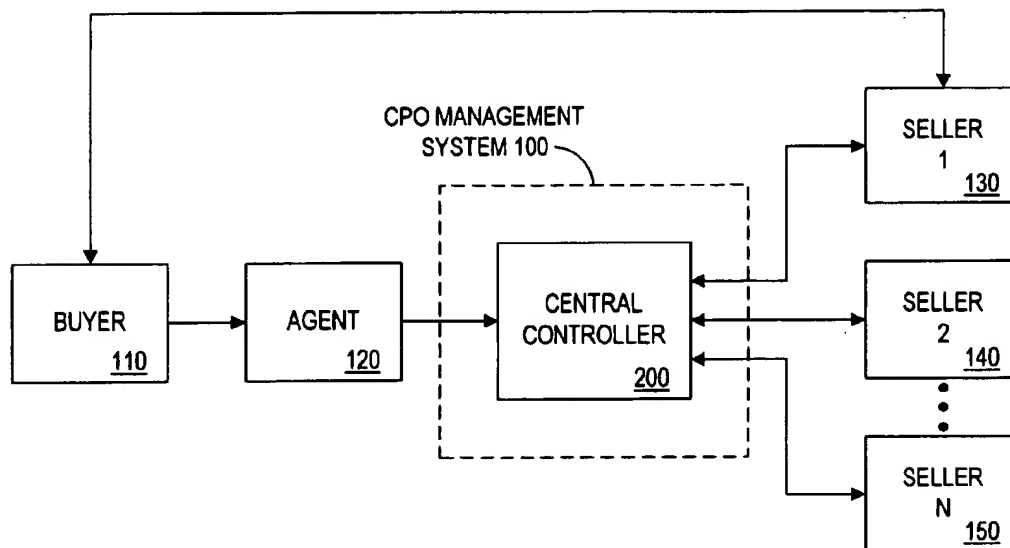


FIG. 1

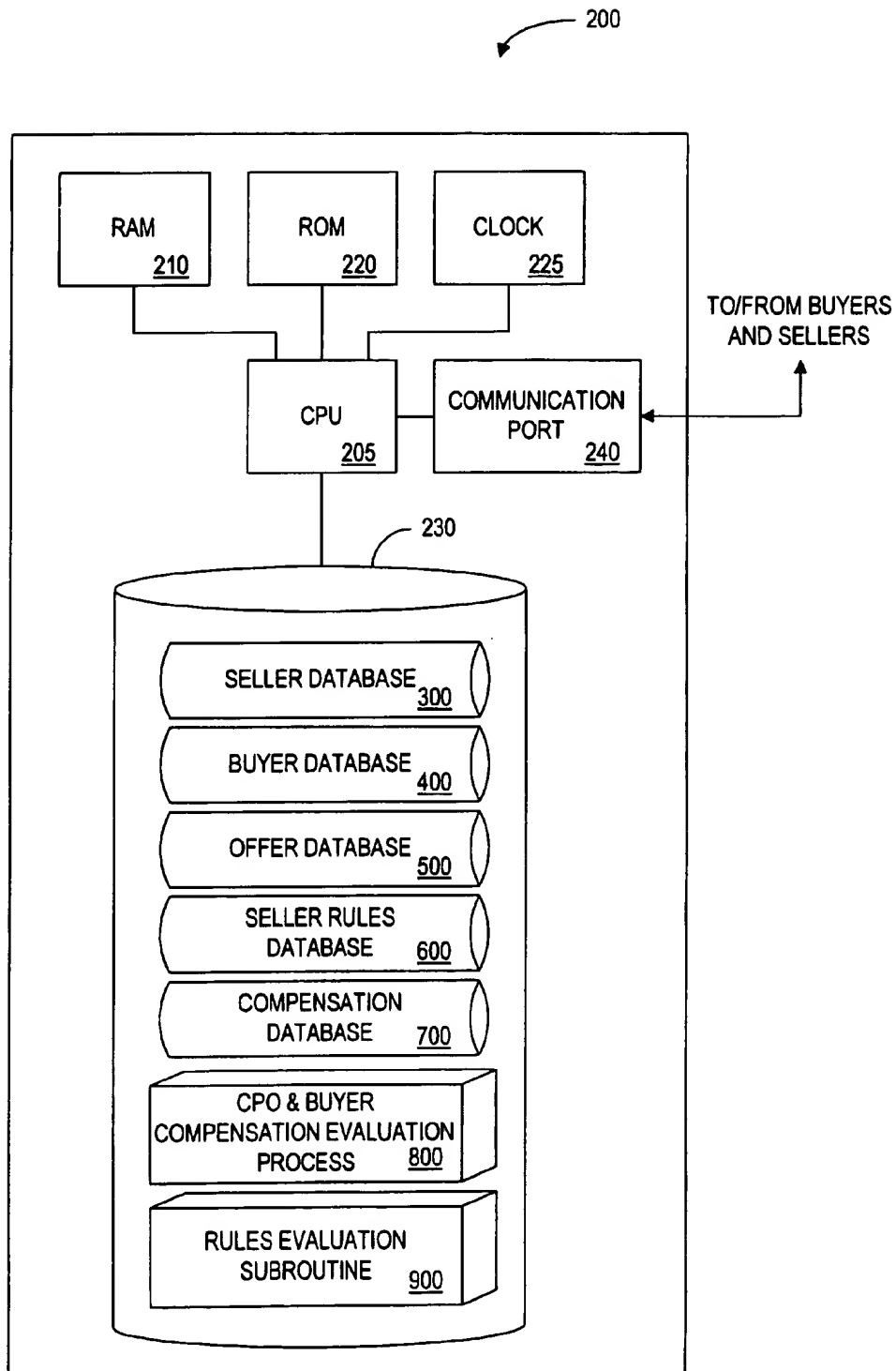


FIG. 2

300

	SELLER IDENTIFIER 340	SELLER NAME 350	CPO TRACKING NUMBER 360	SELLER ACCOUNT NUMBER 370
305	S67676	AMERICAN AIRLINES	627	7199987
310	S89898	DELTA AIRLINES	-	5567891
315	S45454	AT&T	852	79257431
320	S42929	HERTZ	--	3299467
325	S81818	SHERATON	627	1234567
330	S47474	HILTON	-	774368

FIG. 3

400

BUYER IDENTIFIER 420	NAME 430	ADDRESS 440	CREDIT CARD ACCOUNT NUMBER 450	CPO TRACKING NUMBER(S) 460
B2222	JOHN SMITH	3 MAIN ST.	2222-2222-2222-2222	345
B2223	SUE JOHNSON	4 PINE ST.	3333-3333-3333-3333	333
B2224	DAVE McCARTHY	6 TEMPLE ST.	4444-4444-4444-4444	627

FIG. 4

500

CPO TRACKING NUMBER 540	BUYER IDENTIFIER 545	SUBJECT 550	CONDITIONS 555	CPO PRICE 565	STATUS 575	COMPENSATION STATUS 580	COMPENSATION ID 585
852	B22225	HOTEL ROOM	2 ROOM SUITE BOSTON 8/1/97 - 8/3/97	\$180.00	ACCEPTED	NOT ELIGIBLE	N/A
874	B22226	AIRLINE TICKET	R/T LAX - JFK LEAVE 9/15/97, RETURN 9/17/97	\$250.00	ACTIVE	PENDING	3445
627	B22224	AIRLINE TICKET	R/T JFK - LAX LEAVE 8/1/97, RETURN 8/7/97	\$210.00	REJECTED	COMPENSATION SENT	3445
345	B22222	CAR RENTAL	NEW YORK MID-SIZE CAR 8/14/97 - 8/16/97	\$100.00	ACTIVE	PENDING	3456
333	B22223	AIRLINE TICKET	R/T EWR - ORL LEAVE 8/14/97, RETURN 8/21/97	\$150.00	REJECTED	NOT ELIGIBLE	N/A

FIG. 5

600

CPO RULE NUMBER 640	SELLER IDENTIFIER 645	REQUIRED CPO CONDITION(S) 650	MINIMUM PRICE 655
4572	S47474	WEEKEND CAR RENTAL, NEW YORK, NY, 10/1/98 - 12/31/98	\$225.00
5555	S81818	WEEKEND HOTEL, BOSTON, MA, 10/1/98 - 12/31/98	\$99.00/NIGHT DOUBLE OCCUPANCY
6523	S89898	ROUND TRIP AIR TRAVEL TO LOS ANGELES, CA, 1/5/99 - 2/22/99; SAT. NIGHT STAY REQUIRED	\$199.00 PER PERSON

FIG. 6

700

705

710

COMPENSATION IDENTIFIER <u>740</u>	PRODUCT CLASS <u>745</u>	ELIGIBLE OFFER CONDITIONS <u>750</u>	COMPENSATION DESCRIPTION <u>755</u>
3445	AIRLINE TICKETS	OFFER PRICE > \$200.00	FREE WEKEND CAR RENTAL COUPON
3456	CAR RENTAL	OFFER PRICE > \$25/DAY (3 DAY MIN.)	\$25.00 CASH

FIG. 7

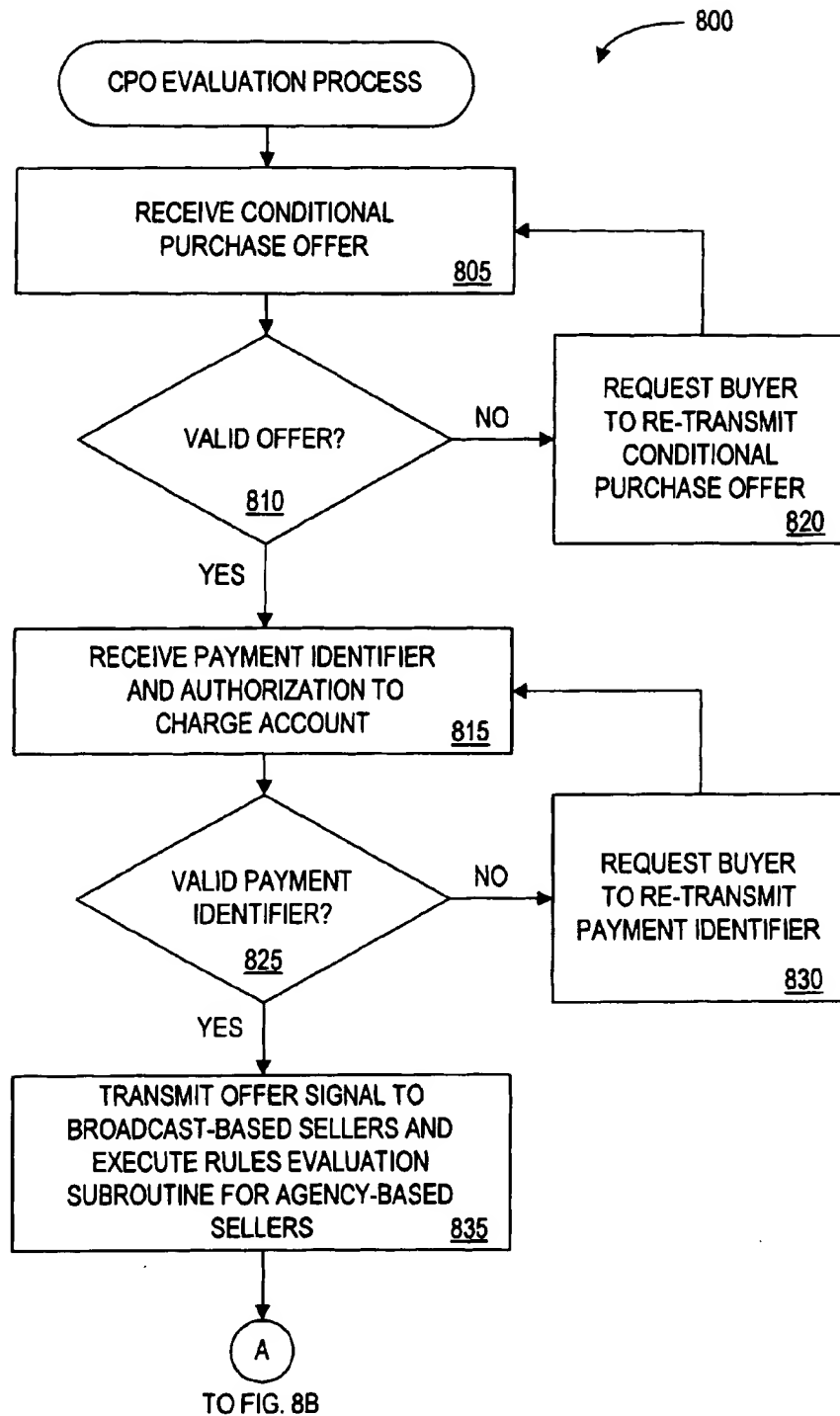


FIG. 8A

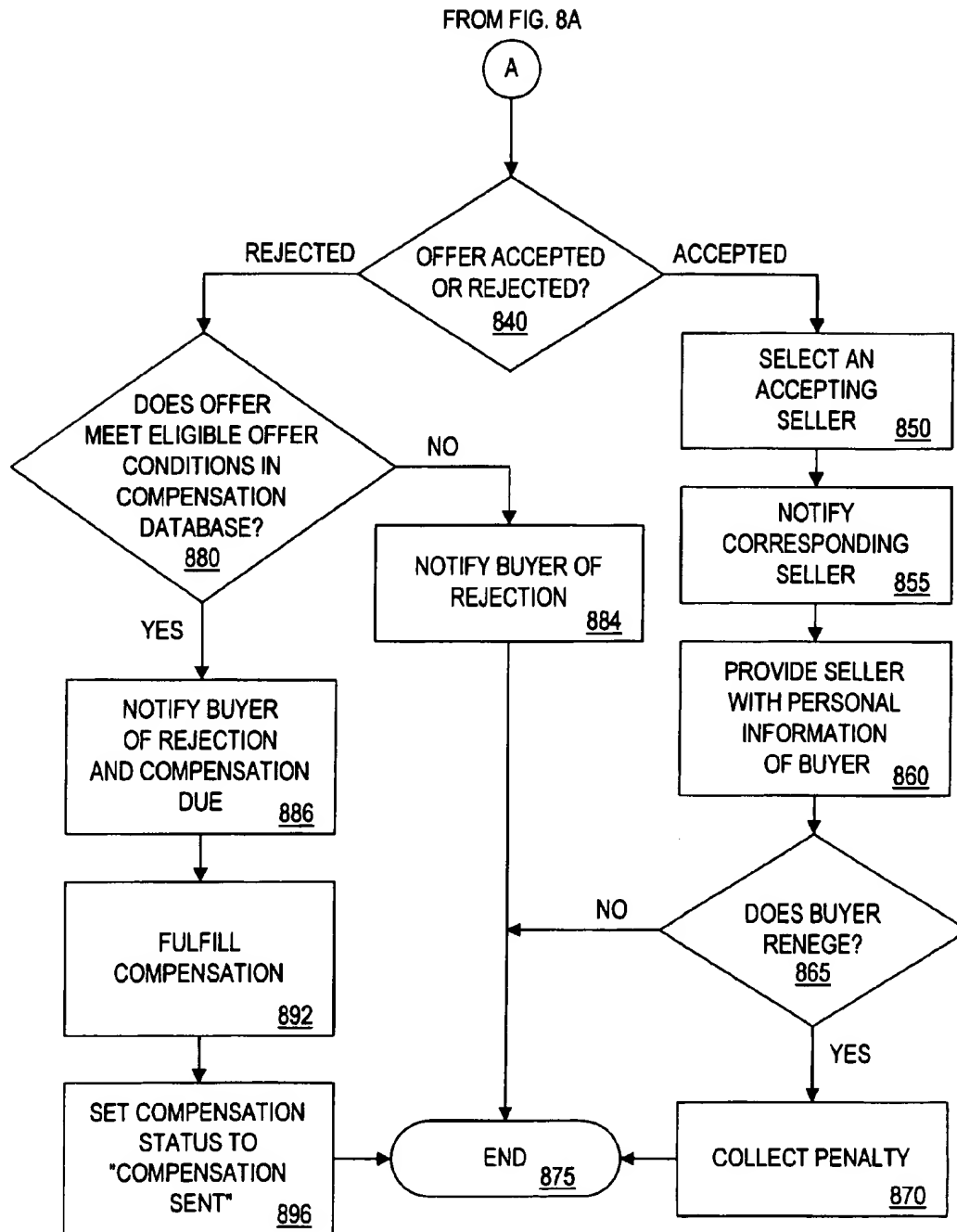


FIG. 8B

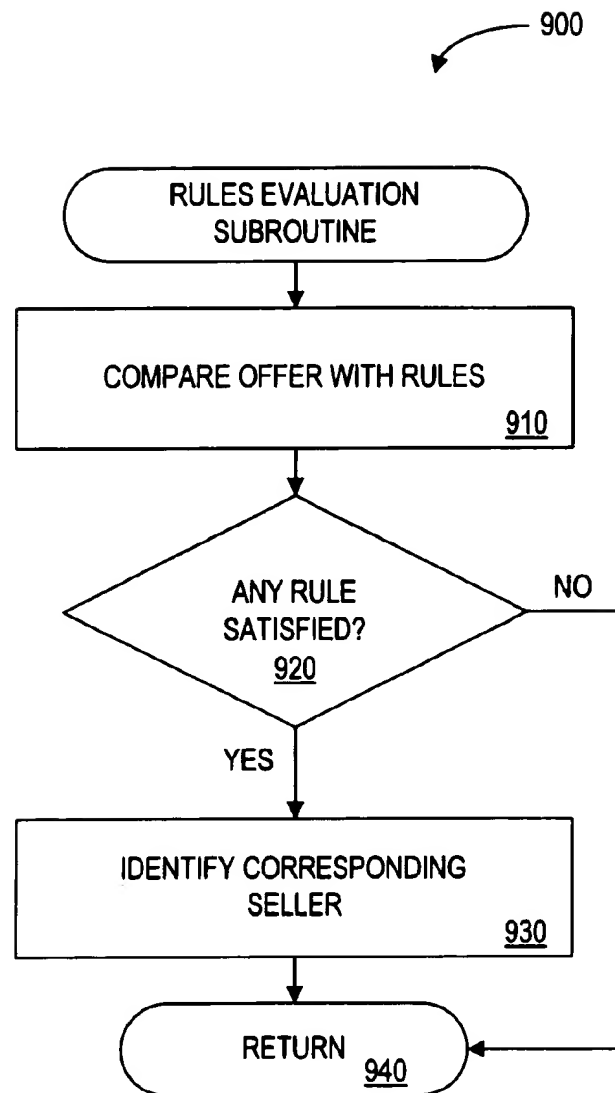


FIG. 9

SYSTEM AND METHOD FOR MOTIVATING SUBMISSION OF CONDITIONAL PURCHASE OFFERS

This application is a continuation-in-part of U.S. patent application Ser. No. 08/943,483, filed Oct. 3, 1997, which is a continuation-in-part of U.S. patent application Ser. No. 08/923,683, which is a continuation-in-part of U.S. patent application Ser. No. 08/889,319, filed Jul. 8, 1997, which is a continuation-in-part of U.S. patent application Ser. No. 08/707,660, filed Sep. 4, 1996, now issued U.S. Pat. No. 5,794,207, each of which is incorporated in its entirety by reference herein.

FIELD OF THE INVENTION

The present invention relates generally to a system for processing the sale of products and, more particularly, to methods and apparatus for processing the sale of products, such as airline tickets and automobiles, to buyers who have submitted a purchase offer for the purchase of such products.

BACKGROUND OF THE INVENTION

Most systems for processing the sale of products are seller-driven, whereby the seller prices, packages, configures and offers the product for sale, and the buyer decides whether or not to accept the seller's offer. In a buyer-driven system, however, the buyer dictates the terms of the offer and one or more sellers decide whether or not to accept the offer. A "help wanted" advertisement, for example, is a buyer-driven inquiry since the employer is looking to locate and buy the services of a qualified employee. The inquiry is advertised to a large number of potential employees, who may respond by submitting their resumes to the prospective employer.

Priceline.com, Incorporated of Stamford, Conn. is a merchant that has successfully implemented a buyer-driven system for the sale of products, such as airline tickets and automobiles. Priceline.com utilizes a Conditional Purchase Offer (CPO) Management System, described in the parent and grandparent applications to the present invention, that processes conditional purchase offers received from individual buyers. These conditional purchase offers contain one or more buyer-defined conditions for the purchase of goods or services, at a buyer-defined price. They are typically guaranteed by a general-purpose account, such as a debit or credit account, and thereby provide sellers with a mechanism for enforcing any agreement that may be reached with the buyer. The conditional purchase offers are provided by the CPO Management System to sellers, either directly or using seller-supplied rates, for individual sellers to either accept or reject. If a seller accepts a conditional purchase offer, the CPO Management System binds the buyer on behalf of the accepting seller, to form a legally binding contract.

Thus, the CPO Management System empowers individual buyers to obtain goods and services at a price set by the buyer. The CPO Management System provides numerous commercial advantages to sellers as well. For example, the CPO Management System permits individual sellers to effectively sell excess capacity when actual demand fails to meet forecasted demand. In particular, the CPO Management System provides an effective mechanism for sellers to be confident that if they accept a buyer's offer, the buyer will purchase the requested goods or services at the agreed-upon price, and not just use the information to ascertain the seller's underlying level of price flexibility, which, if known

to a seller's competitors or customers, could impact the seller's overall revenue structure.

For many transactions, the CPO Management System will effectively complete transactions in this manner. Invariably, however, a percentage of buyers will submit purchase offers that are not acceptable to any seller, often because the price offered by the buyer is too low. The success of the CPO Management System depends, at least in part, on its utilization by a large number of both buyers and sellers. Specifically, buyers are incented to submit conditional purchase offers if they know the conditional purchase offers will be reviewed by a large number of potential sellers. Sellers are incented to consider conditional purchase offers if they can expect a large number of attractive offers. In addition to being a lost business opportunity, unacceptable conditional purchase offers require buyers and sellers to spend time submitting and reviewing such conditional purchase offers. Thus, buyers and sellers alike may be frustrated and discouraged from utilizing the CPO Management System, if the acceptance rate for submitted conditional purchase offers does not meet satisfactory levels.

Thus, while it is important to increase buyer demand generally, it is even more desirable to stimulate demand in a manner that encourages buyers to submit conditional purchase offers that are more likely to be accepted by sellers. In addition, in order to curb buyer dissatisfaction in the event that a conditional purchase offer is not accepted, and to reduce the perceived difficulties that may be associated with submitting a conditional purchase offer, it is desirable to compensate buyers who are unable to obtain the sought-after product.

SUMMARY OF THE INVENTION

A system and method are disclosed for encouraging buyers to submit CPOs to a CPO management system for a desired product. The CPO management system processes each received CPO to determine whether one or more sellers are willing to accept a given CPO. As used herein, a CPO is an offer containing one or more conditions submitted by a buyer for the purchase of a product at a buyer-defined price.

The disclosed CPO management system compensates a buyer if the buyer's conditional purchase offer is rejected, or expires before an acceptance is received. If a CPO is rejected by the sellers, or has expired before an acceptance is received, the CPO management system evaluates one or more stored compensation offers to determine if the buyer is eligible for rejection compensation. The compensation offers may optionally require that the conditional purchase offer satisfies one or more additional predefined eligibility criteria in order to be eligible for the rejection compensation. If the predefined criteria is met, the rejection compensation is provided to the buyer. The rejection compensation can include, for example, (i) a cash award, (ii) a prize, (iii) a coupon or credit that may be redeemed for a discount against future transactions, thereby encouraging future use, or (iv) any other compensation effective to motivate a buyer to submit a CPO.

Thus, the present invention stimulates demand and curbs buyer dissatisfaction by providing compensation to the buyer if the offer is not accepted. In addition, the predefined eligibility criteria can be used to stimulate demand in a desired manner, and thereby increase the reasonability of conditional purchase offers. For example, the CPO management system can encourage buyers to submit conditional purchase offers having an offer price greater than a specified minimum price, which may be more likely to be accepted.

A more complete understanding of the present invention, as well as further features and advantages of the present invention, will be obtained by reference to the following detailed description and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic block diagram illustrating a conditional purchase offer (CPO) management system in accordance with the present invention;

FIG. 2 is a schematic block diagram of the exemplary central controller of FIG. 1;

FIG. 3 illustrates a sample table from the seller database of FIG. 2;

FIG. 4 illustrates a sample table from the buyer database of FIG. 2;

FIG. 5 illustrates a sample table from the offer database of FIG. 2;

FIG. 6 illustrates a sample table from the seller rules database of FIG. 2;

FIG. 7 illustrates a sample table from the compensation database of FIG. 2;

FIG. 8 is a flowchart describing an exemplary CPO and buyer compensation evaluation process implemented by the central controller of FIG. 2; and

FIG. 9 is a flowchart describing an exemplary rules evaluation subroutine implemented by the central controller of FIG. 2.

DETAILED DESCRIPTION

FIG. 1 shows a conditional purchase offer (CPO) management system 100 for receiving and processing CPOs for one or more goods or services, from one or more buyers 110 or agents 120 (on behalf of buyers 110). The CPO management system 100 determines whether one or more sellers, such as sellers 130, 140, 150 are willing to accept a given CPO. As discussed further below, if a seller accepts a given CPO, the CPO management system 100 is operated to bind the buyer on behalf of the accepting seller, to form a legally binding contract.

CPO Terminology

As used herein, the following terms are defined to mean:

Agency-Based Seller—A seller who has delegated authority to the CPO management system operator to accept or reject a given CPO using seller-defined CPO Rules.

Broadcast-Based Seller—A seller who has received a CPO from the CPO management system (directly or by, for example, access to an electronic posting) for evaluation.

Conditional Purchase Offer (CPO)—An offer containing one or more conditions submitted by a buyer for the purchase of goods and/or services at a buyer-defined price.

Binding Conditional Purchase Offer (Binding CPO)—A binding offer containing one or more conditions submitted by a buyer for the purchase of goods and/or services at a buyer-defined price. As compared to a CPO, a Binding CPO includes a payment guarantee, for example with a General Purpose Account, and authorization to debit the Account upon acceptance of the CPO.

Conditional Purchase Offer (CPO) Rule—A restriction defined by an Agency-Based Seller under which the operator of the CPO management system may act as an agent to determine whether to fill a CPO for that Agency-Based Seller.

CPO Management System—One or more controllers that receive and process CPOs for one or more goods or services, from one or more buyers, to determine if one or more sellers (Agency-Based or Broadcast-Based Sellers) are willing to accept a CPO.

General Purpose Account—Any account from which payment can be made, including a credit or debit account.

According to a feature of the present invention, a CPO management system 100 is disclosed that compensates buyers (monetarily or otherwise) if the buyer's conditional purchase offer is not accepted. The CPO management system 100 evaluates each received CPO to identify CPOs which are rejected by sellers, or which have expired before an acceptance is received. If the CPO management system 100 determines that a received CPO is rejected by the sellers, or has expired before an acceptance is received, the CPO management system 100 evaluates one or more stored compensation offers to determine if the buyer is eligible for rejection compensation.

Thus, a buyer may be eligible for rejection compensation if their offer is not accepted by the CPO management system 100. In addition, the CPO management system 100 may require that the conditional purchase offer satisfies one or more additional predefined eligibility criteria in order to be eligible for the rejection compensation. In one embodiment, the predefined eligibility criteria for receiving rejection compensation is provided to a buyer before a CPO is submitted by the buyer. For example, the predefined eligibility criteria can require a minimum offer price to be eligible for the rejection compensation. The minimum offer price can be derived from historical, actual or forecasted pricing. If the predefined criteria is met, the rejection compensation is provided to the buyer. The rejection compensation can include, for example, (i) a cash award, (ii) a prize, (iii) a coupon or credit that may be redeemed for a discount against future transactions, thereby encouraging future use, or (iv) any other compensation effective to motivate a buyer to submit a CPO.

Thus, the present invention stimulates demand and curbs buyer dissatisfaction by providing compensation to the buyer if the offer is not accepted. Moreover, the CPO management system 100 can utilize the predefined eligibility criteria to stimulate demand in a desired manner, and thereby increase the reasonability of demand. For example, the CPO management system 100 can provide buyers with a coupon for a free weekend car rental as rejection compensation for all rejected conditional purchase offers for air travel having an offer price of at least \$200.00. In this manner, the CPO management system 100 encourages buyers to submit conditional purchase offers having offer prices greater than \$200.00, which may be more likely to be accepted. In addition, the CPO management system 100 can encourage buyers to agree to other conditions before they are eligible for rejection compensation, such as a Saturday night stay for air travel, that may make a conditional purchase offer more likely to be accepted.

In one embodiment, the CPO management system 100 may implement one or more features to ensure that buyers are not submitting multiple conditional purchase offers merely to obtain the rejection compensation. For example, for conditional purchase offers submitted by means of an online connection, for example, to a Web site, the CPO management system 100 may store a "cookie" on the buyer's computer so that the buyer may be recognized on subsequent visits to the Web site. In addition, the buyer may be subsequently identified by means of a credit card number buyer identifier submitted with the conditional purchase offer.

As shown in FIG. 1, the CPO management system 100 includes a central controller 200, discussed further below in conjunction with FIG. 2. The CPO management system 100 may provide a given CPO to selected sellers 130, 140, 150 based on predefined screening criteria, so that sellers only obtain CPOs that they may be interested in or are authorized to screen. Alternatively, the CPO management system 100 may provide all CPOs to all sellers for screening.

As discussed further below, each buyer 110 contacts the CPO management system 100, for example, by means of telephone, facsimile, online access (i.e. the Internet), electronic mail, in-person contact or through an agent, and provides the CPO management system 100 with the terms of the buyer's CPO. It is noted that each buyer 110 and seller 130, 140, 150 may employ a general-purpose computer for communicating with the CPO management system 100. The general-purpose computer may be comprised of a processing unit, a modem, memory means and any software required to communicate with the CPO management system 100.

The CPO management system 100, as well as any general-purpose computers utilized by buyers 110 or sellers 130, 140, 150 (collectively, the "nodes") transmit digitally encoded data and other information between one another. The communication links between the nodes can comprise, for example, a cable, fiber or wireless link on which electronic signals can propagate.

Agency and Broadcast-Based Sellers

According to one feature of the present invention, the CPO management system 100 provides an optional agency feature that permits the CPO management system 100 to accept or reject a given CPO on behalf of certain agency-based sellers 130 who have delegated such authority to the CPO management system 100. Thus, the CPO management system 100 (i) evaluates CPOs on behalf of certain agency-based sellers 130 who have delegated authority to the CPO management system 100 to accept or reject a given CPO, and (ii) permits broadcast-based sellers, such as sellers 140, 150 to evaluate CPOs independently.

Thus, the CPO management system 100 can optionally provide one or more CPOs to each broadcast-based seller 140, 150, for the seller 140, 150 to independently determine whether or not to accept a given CPO. It is noted that the CPO management system 100 can provide a CPO to each appropriate broadcast-based seller 140, 150, for example, by means of a broadcast transmission, or by means of posting the CPO, for example, on an electronic bulletin board or secure web site accessible by each broadcast-based seller 140, 150. Alternatively, the CPO management system 100 can evaluate one or more CPOs against a number of CPO rules defined by one or more agency-based sellers 130, to decide on behalf of an agency-based seller 130 whether to accept or reject a given CPO. An illustrative set of CPO rules for one illustrative agency-based seller 130 is set forth in FIG. 6. Thus, the CPO management system 100 can determine if one or more sellers 140, 150 accepts a given CPO by providing the CPO to each seller 140, 150 and receiving an acceptance or rejection, or by applying the CPO to the CPO rules to render a decision to either accept, reject or counter a CPO on behalf of a particular seller 130.

As discussed further below, a CPO rule is a set of restrictions defined by a given agency-based seller 130 under which the seller 130 is willing to accept a CPO. For a more detailed discussion of CPO rules, the manner in which they are generated, and related security issues, see U.S. patent application Ser. No. 08/889,319, entitled Con-

ditional Purchase Offer Management System, filed Jul. 8, 1997, referenced herein above.

A CPO can optionally contain one or more buyer-defined variable or flexible conditions, typically specified using a range. For example, the variable condition may be a date range within which the product may be delivered by the seller. Other variable conditions might include a price range, a performance range or a quality range. The seller may then choose a product to fill the buyer's flexible condition within the specified range. Such a variable condition may provide substantial assistance to the seller in filling the buyer's CPO. For example, with respect to an airline ticket, the seller may be able to meet a buyer's specified price if the CPO permits the seller to select a flight within a range of times or days.

It is desirable that in one embodiment the present invention prevents buyers from repetitively querying, or "pinging," the CPO management system 100 to determine the underlying price flexibility of the sellers. Such pinging might result in potential damage to the seller's price margins and profitability. As mentioned above, a binding CPO discourages pinging by ensuring that if an offer is accepted, the buyer must actually purchase the product. Another method of discouraging pinging includes preventing buyers from submitting repetitive, similar offers. For example, repetitive CPOs that change only the offer price in an effort to determine price flexibility may be blocked by the system. In one embodiment, subsequent CPOs by the same buyer are accepted by the CPO management system 100 only if there is some substantial change to the buyer specifications that would result in the purchase of an essentially different product. For example, with respect to the sale of airline tickets, subsequent CPOs may be accepted for processing only if there is a significant change in the itinerary. Yet another method for discouraging pinging is to require a payment or fee for each submission of a CPO.

In one embodiment of the invention, seller identities are maintained anonymous within the CPO management system 100 until a CPO is accepted. Such seller anonymity, by itself and in combination with the discouragement of price pinging discussed above, enables sellers to participate in the CPO process without fear of undercutting their published price structures and losing their regular customer base. For example, most retailers have published product prices, and loyal customers who willingly pay those prices. Participating in the CPO management system 100 enables a seller to discount those products, potentially below its published prices, to fill offers from buyers who might not otherwise pay published prices. With anonymity, these sellers can more freely participate in the CPO process with less fear of losing their regular customers and undercutting their published price structure.

FIG. 2 is a block diagram showing the architecture of an illustrative central controller 200. The central controller 200 includes certain standard hardware components, such as a central processing unit (CPU) 205, a random access memory (RAM) 210, a read only memory (ROM) 220, a clock 225, a data storage device 230, and a communications port 240. The CPU 205 can be linked to each of the other listed elements, either by means of a shared data bus, or dedicated connections, as shown in FIG. 2. The communications port 240 connects the central controller 200 to each buyer 110 and seller 130 and optionally to remote credit processing servers. The communications port 240 can include multiple communication channels for simultaneously establishing a plurality of connections.

The ROM 220 and/or data storage device 230 are operable to store one or more instructions, discussed further

below in conjunction with FIGS. 8 and 9, which the CPU 205 is operable to retrieve, interpret and execute. For example, the ROM 220 and/or data storage device 230 can store processes to accomplish the transfer of required payments, charges and debits, between the sellers 130 and buyers 110. The processing of such accounting transactions can be secured in a conventional manner, for example, using well-known cryptographic techniques.

As discussed further below in conjunction with FIGS. 3 through 6, respectively, the data storage device 230 includes a seller database 300, a buyer database 400, an offer database 500, a seller rules database 600 and a compensation database 700. The seller database 300 stores information on each seller 130, 140, 150 which is registered with the CPO management system 100 to sell products, i.e., goods and/or services to CPO buyers, including contact information. The buyer database 400 stores information on each buyer transacting business through the CPO management system 100, including identification information and billing information, such as a credit card number or another general-purpose account identifier. The offer database 500 contains a record of each CPO processed by the CPO management system 100, including the conditions associated with the CPO and the associated status. The seller rules database 600 maintains the CPO rules for one or more agency-based sellers 130. The compensation database 700 stores the various rejection compensation offers and corresponding predefined eligibility criteria.

In addition, the data storage device 230 includes a CPO and buyer compensation evaluation process 800 and a rules evaluation subroutine 900, discussed further below in conjunction with FIGS. 8 and 9, respectively. Generally, the CPO and buyer compensation evaluation process 800 includes the steps of (i) receiving each CPO from a buyer 110, (ii) providing each CPO to the appropriate broadcast-based sellers and evaluating evaluates each CPO against the appropriate rules of each agency-based seller, (iii) determining whether any sellers 130, 140, 150 accept the CPO, and if the CPO is not accepted by any seller, (iv) determining if the buyer is eligible for rejection compensation. The rules evaluation subroutine 900 is a subroutine executed by the CPO and buyer compensation evaluation process 800, which receives a CPO and compares the CPO against the rules of one or more agency-based sellers to generate a response on behalf of the sellers to the given CPO.

DATABASES

FIG. 3 illustrates an exemplary seller database 300 that stores information on each seller which is registered with the CPO management system 100 to sell goods or services to CPO buyers. The seller database 300 maintains a plurality of records, such as records 305-330, each associated with a different seller. For each seller identifier listed in field 340, the seller database 300 includes the corresponding seller name in field 350, as well as a CPO tracking number and seller account number in fields 360 and 370, respectively. It is noted that the seller identifier stored in field 340 may be utilized, for example, to index the offer database 500 to identify CPOs which have been accepted by the corresponding seller.

FIG. 4 illustrates an exemplary buyer database 400 that stores information on each buyer transacting business through the CPO management system 100, including biographical information and billing information, such as a credit card number or another general purpose account identifier. The buyer database 400 maintains a plurality of

records, such as records 405-415, each associated with a different buyer. For each buyer identifier in field 420, the buyer database 400 includes the corresponding buyer name and address in fields 430 and 440, respectively, and credit card account number in field 450. In addition, the buyer database 400 can include the CPO tracking numbers associated with the buyer in field 460. The buyer identifier stored in field 420 may be utilized, for example, to index a historical database (not shown) of previous purchases and CPOs associated with the buyer.

FIG. 5 illustrates an offer database 500 that contains a record of each CPO processed by the CPO management system 100, including the subject and conditions of each CPO and the associated status. The offer database 500 maintains a plurality of records, such as records 505-525, each associated with a different CPO. For each CPO number listed in field 540, the offer database 500 includes an identifier of the buyer associated with the CPO in field 545, as well as the subject and conditions of the CPO in fields 550 and 555, respectively. In addition, the offer database 500 records the buyer-specified CPO price and current status in fields 565 and 575, respectively. The current status options recorded in field 575 include, for example, active, accepted, rejected or expired. A compensation status field 580 contains data indicating the eligibility of a CPO for compensation in the event it is not accepted (i.e. is rejected or expired). Compensation status can include, for example, not eligible, compensation sent (i.e. eligible and paid), or pending (i.e. eligible if rejected or expired). A compensation identifier field 585 references eligible compensation offers to the compensation data stored in compensation database 700, discussed below.

FIG. 6 illustrates a seller rules database 600 that maintains the CPO rules for one or more agency-based sellers. The seller rules database 600 maintains a plurality of records, such as records 605-615, each associated with a different CPO rule. For each CPO rule identified in field 640, the seller rules database 600 identifies the corresponding seller identifier in field 645, as well as the required conditions and minimum price for a CPO to be accepted on behalf of the corresponding seller in fields 650 and 655, respectively.

FIG. 7 illustrates a compensation database 700 that stores the various rejection compensation offers and corresponding predefined eligibility criteria. The compensation database 700 maintains a plurality of records, such as records 705 and 710, each associated with a different compensation offer. For each compensation offer identified in field 740, the compensation database 700 identifies the corresponding product class in field 745, as well as the minimum required conditions for an unaccepted CPO to be eligible for rejection compensation in field 750. A description of the rejection compensation is provided in field 755.

It will be appreciated that many different processes are available for determining the value of the rejection compensation. In one embodiment, it may simply be fixed by the CPO system. In other embodiments, the value of the compensation may be dependent on the value of the offer, and/or it may be a function of the relationship between the offer price and the market value. With respect to airline travel, the compensation value may be determined as a function of how close the buyer offer is made relative to a travel date and/or a peak travel time. In yet another embodiment, the value of the compensation may be a function of the amount of time that the offer is made available to potential sellers.

PROCESSES

As discussed above, the central controller 200 can execute a CPO and buyer compensation evaluation process 800 that

includes the steps of (i) receiving each CPO from a buyer 110, (ii) providing each CPO to the appropriate broadcast-based sellers and evaluating each CPO against the appropriate rules of each agency-based seller, (iii) determining whether any sellers 130, 140, 150 accept the CPO, and if the CPO is not accepted by any seller, (iv) determining if the buyer is eligible for rejection compensation. While CPOs may be binding or nonbinding in nature, the present embodiment is described with respect to a binding CPO. The processing of a nonbinding CPO is substantially identical, with the exception that authorization to charge the buyer credit card account (or another general purpose account) may be obtained after a seller acceptance of the CPO is identified. Alternatively, the process may be identical with the buyer being given the option to renege after the CPO is accepted by a seller.

As shown in FIG. 8, the CPO and buyer compensation evaluation process 800 initially receives a CPO from a buyer 10 during step 805. In one embodiment, the predefined eligibility criteria for receiving rejection compensation can be provided to a buyer before a CPO is submitted by the buyer. A test is then performed during step 810 to determine if the CPO is valid. For example, the test performed during step 810 may determine if the buyer has specified each of the relevant conditions for a given product category.

If it is determined during step 810 that the terms of the CPO are not valid, then the buyer is requested to retransmit the CPO during step 820 and program control returns to step 805. If, however, it is determined during step 810 that the terms of the CPO are valid, then an identifier of a general purpose account, such as a credit or debit card account from which funds may be paid, and an authorization to charge such general purpose account, are received during step 815. In this manner, the CPO is guaranteed with a general-purpose account, for example, using a line of credit on a credit card account. Appropriate legal language can be displayed or read to the buyer at the time the CPO is received, to form a binding CPO.

A test is then performed during step 825 to determine if the payment identifier is valid. For example, the payment identifier may be transmitted to a remote credit card server for pre-authorization or the like. If it is determined during step 825 that the payment identifier is not valid, then the buyer is requested to retransmit a different payment identifier during step 830 and program control returns to step 815. If, however, it is determined during step 825 that the payment identifier is valid, then the CPO management system 100 transmits the CPO to the broadcast-based sellers and executes the rules evaluation subroutine 900, discussed below in conjunction with FIG. 9, for agency-based sellers during step 835.

A test is performed during step 840 to determine if the CPO is accepted or rejected (including expired CPOs). If it is determined during step 840 that the CPO is accepted, the CPO is processed during steps 850 through 870. The CPO evaluation process 800 selects one accepting seller during step 850 and notifies the corresponding seller during step 855. For example, the accepting seller can be selected based upon (i) the priority in which the acceptances are received, (ii) the CPO acceptance rate of each seller, (iii) priorities negotiated by each seller, (iv) the acceptance providing the lowest cost to the buyer, or (v) the highest commission rates paid by the seller to the CPO management system 100.

The buyer's personal information is provided to the seller during step 860 and the buyer is notified of the acceptance. A test is then performed during step 865 to determine if the

buyer reneges on consummating the transaction. If it is determined during step 865 that the buyer reneges on consummating the transaction, then a penalty is charged to the buyer's designated general-purpose account during step 870, before program control terminates during step 875. It is noted that for a nonbinding CPO the buyer may be charged a penalty for failing to complete the transaction in the event the CPO is accepted. For a binding CPO, however, the CPO is guaranteed by the general purpose account and it is not possible for the buyer to renege. If, however, it is determined during step 865 that the buyer does not renege on consummating the transaction, then program control terminates during step 875.

If it is determined during step 840 that the CPO is rejected, or has expired, then a further test is performed during step 880 to determine if the CPO meets the predefined eligibility conditions of any compensation offer in the compensation database 700. If it is determined during step 880 that the CPO does not meet the predefined eligibility conditions of any compensation offer in the compensation database 700, then the buyer is notified of the rejection during step 884, before program control terminates during step 875.

If, however, it is determined during step 880 that the CPO does meet the predefined eligibility conditions of any compensation offer in the compensation database 700, then the buyer is notified of the rejection and the amount of the rejection compensation due during step 886. The compensation is fulfilled during step 892 and the status of the compensation offer is set to "compensation sent" in the offer database 500 during step 896, before program control terminates during step 875.

As previously indicated, the CPO and buyer compensation evaluation process 800 executes a rules evaluation subroutine 800 during step 835 to determine if one or more agency-based sellers are willing to accept a given CPO. As shown in FIG. 9, the rules evaluation subroutine 900 compares the terms associated with the CPO during step 910 with the corresponding restrictions set forth in any CPO rules defined by any agency-based seller. A test is then performed during step 920 to determine if any CPO rule is satisfied. If it is determined during step 920 that no CPO rule is satisfied, then program control terminates during step 940. If, however, it is determined during step 920 that a CPO rule is satisfied, the corresponding seller is identified during step 930, before program control terminates during step 940.

It is to be understood that the embodiments and variations shown and described herein are merely illustrative of the principles of this invention and that various modifications may be implemented by those skilled in the art without departing from the scope and spirit of the invention.

We claim:

1. A method of using a computer to compensate buyers who make conditional purchase offers, comprising:
 - receiving, using a computer, a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition and a variable condition;
 - processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;
 - and
 - compensating said buyer if said conditional purchase offer is not accepted by a seller.
2. A method of using a computer to compensate buyers who make conditional purchase offers, comprising:
 - receiving, using a computer, a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

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processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller; preventing said buyer from identifying an acceptable seller price; and compensating said buyer if said conditional purchase offer is not accepted by a seller.

3. A method of using a computer to compensate buyers who make conditional purchase offers, comprising:

- receiving, using a computer, a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;
- processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;
- compensating said buyer if said conditional purchase offer is not accepted by a seller; and
- maintaining the anonymity of said seller until said conditional purchase offer is accepted.

4. The method according to claims 1, 9 or 12, wherein processing said conditional purchase offer comprises providing said conditional purchase offer to a plurality of potential sellers of said product.

5. The method according to claims 1, 2 or 3, wherein processing said conditional purchase offer comprises identifying one or more rules from a plurality of potential sellers, each of said rules containing one or more seller-defined restrictions.

6. The method according to claims 1, 2 or 3, wherein said buyer may be compensated with a rejection compensation selected from the group comprising (i) a cash award, (ii) a prize, or (iii) a coupon or credit that may be redeemed for a discount against a future sale.

7. The method according to claims 1, 2 or 3, wherein said conditional purchase offer further includes a payment identifier for specifying an account from which funds may be paid.

8. The method according to claim 7, further comprising using said payment identifier to pay a penalty if said buyer does not complete said sale.

9. The method according to claim 7, wherein said funds are paid from a general-purpose account.

10. The method according to claims 1, 2 or 3, wherein said conditional purchase offer is a binding conditional purchase offer.

11. The method according to claim 2, wherein preventing said buyer from identifying said acceptable seller price comprises requiring said buyer to submit a binding conditional purchase offer.

12. The method according to claim 2, wherein preventing said buyer from identifying said acceptable seller price comprises preventing said buyer from submitting multiple conditional purchase offers.

13. A method of using a computer to compensate buyers who make conditional purchase offers, comprising:

- receiving, using a computer, a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;
- processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;
- and
- compensating said buyer if an unaccepted conditional purchase offer meets predefined criteria;

wherein said predefined criteria includes a minimum offer price.

14. A method of using a computer to compensate buyers who make conditional purchase offers, comprising:

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receiving, using a computer, a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition and a variable condition;

processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller; and

compensating said buyer if an unaccepted conditional purchase offer meets predefined criteria.

15. A method of using a computer to compensate buyers who make conditional purchase offers, comprising:

- receiving, using a computer, a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;
- processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;
- compensating said buyer if an unaccepted conditional purchase offer meets predefined criteria; and
- preventing said buyer from identifying an acceptable seller price.

16. A method of using a computer to compensate buyers who make conditional purchase offers, comprising:

- receiving, using a computer, a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;
- processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;
- compensating said buyer if an unaccepted conditional purchase offer meets predefined criteria; and
- maintaining the anonymity of said seller until said conditional purchase offer is accepted.

17. The method according to claims 13, 14, 15 or 16, wherein processing said conditional purchase offer comprises providing said conditional purchase offer to a plurality of potential sellers of said product.

18. The method according to claims 13, 14, 15 or 16, wherein processing said conditional purchase offer comprises identifying one or more rules from a plurality of potential sellers, each of said rules containing one or more seller-defined restrictions.

19. The method according to claims 13, 14, 15 or 16, wherein said buyer may be compensated with a rejection compensation selected from the group comprising (i) a cash award, (ii) a prize, or (iii) a coupon or credit that may be redeemed for a discount against a future sale.

20. The method according to claims 13, 14, 15 or 16, wherein said conditional purchase offer further includes a payment identifier for specifying an account from which funds may be paid.

21. The method according to claim 20, further comprising using said payment identifier to pay a penalty if said buyer does not complete said sale.

22. The method according to claim 20, wherein said funds are paid from a general-purpose account.

23. The method according to claims 13, 14, 15 or 16, wherein said conditional purchase offer is a binding conditional purchase offer.

24. The method according to claim 15, wherein preventing said buyer from identifying said acceptable seller price comprises requiring said buyer to submit a binding conditional purchase offer.

25. The method according to claim 15, wherein preventing said buyer from identifying said acceptable seller price comprises preventing said buyer from submitting multiple conditional purchase offers.

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26. A system for compensating buyers who make conditional purchase offers, comprising:

a memory device; and

a processor in communication with said memory device, said processor configured to:

receive a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition and a variable condition;

process said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller; and

compensate said buyer if said conditional purchase offer is not accepted by a seller.

27. A system for compensating buyers who make conditional purchase offers, comprising:

a memory device; and

a processor in communication with said memory device, said processor configured to:

receive a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

process said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;

prevent said buyer from identifying an acceptable seller price; and

compensate said buyer if said conditional purchase offer is not accepted by a seller.

28. The system according to claim 27, wherein preventing said buyer from identifying said acceptable seller price comprises requiring said buyer to submit a binding conditional purchase offer.

29. The system according to claim 27, wherein preventing said buyer from identifying said acceptable seller price comprises preventing said buyer from submitting multiple conditional purchase offers.

30. A system for compensating buyers who make conditional purchase offers, comprising:

a memory device; and

a processor in communication with said memory device, said processor configured to:

receive a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

process said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;

compensate said buyer if said conditional purchase offer is not accepted by a seller; and

maintain the anonymity of said seller until said conditional purchase offer is accepted.

31. The system according to claims 26, 27 or 30, wherein processing said conditional purchase offer comprises providing said conditional purchase offer to a plurality of potential sellers of said product.

32. The system according to claims 26, 27 or 30, wherein processing said conditional purchase offer comprises identifying one or more rules from a plurality of potential sellers, each of said rules containing one or more seller-defined restrictions.

33. The system according to claims 26, 27 or 30, wherein said buyer may be compensated with a rejection compensation selected from the group comprising (i) a cash award, (ii) a prize, or (iii) a coupon or credit that may be redeemed for a discount against a future sale.

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34. The system according to claims 26, 27 or 30, wherein said conditional purchase offer further includes a payment identifier for specifying an account from which funds may be paid.

35. The system according to claim 34, wherein said processor is further configured to use said payment identifier to pay a penalty if said buyer does not complete said sale.

36. The system according to claim 34, wherein said funds are paid from a general-purpose account.

37. The system according to claims 26, 27 or 30, wherein said conditional purchase offer is a binding conditional purchase offer.

38. A system for compensating buyers who make conditional purchase offers, comprising:

a memory device; and

a processor in communication with said memory device, said processor configured to:

receive a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

process said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller; and

compensate said buyer if an unaccepted conditional purchase offer meets predefined criteria;

wherein said predefined criteria includes a minimum offer price.

39. A system for compensating buyers who make conditional purchase offers, comprising:

a memory device; and

a processor in communication with said memory device, said processor configured to:

receive a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition and a variable condition;

process said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller; and

compensate said buyer if an unaccepted conditional purchase offer meets predefined criteria.

40. A system for compensating buyers who make conditional purchase offers, comprising:

a memory device; and

a processor in communication with said memory device, said processor configured to:

receive a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

process said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;

compensate said buyer if an unaccepted conditional purchase offer meets predefined criteria; and

prevent said buyer from identifying an acceptable seller price.

41. The system according to claim 40, wherein preventing said buyer from identifying said acceptable seller price comprises requiring said buyer to submit a binding conditional purchase offer.

42. The system according to claim 40, wherein preventing said buyer from identifying said acceptable seller price comprises preventing said buyer from submitting multiple conditional purchase offers.

43. A system for compensating buyers who make conditional purchase offers, comprising:

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a memory device; and

a processor in communication with said memory device, said processor configured to:

receive a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

process said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;

compensate said buyer if an unaccepted conditional purchase offer meets predefined criteria; and maintain the anonymity of said seller until said conditional purchase offer is accepted.

44. The system according to claims 38, 39, 40 or 43, wherein processing said conditional purchase offer comprises providing said conditional purchase offer to a plurality of potential sellers of said product.

45. The system according to claims 38, 39, 40 and 43, wherein processing said conditional purchase offer comprises identifying one or more rules from a plurality of potential sellers, each of said rules containing one or more seller-defined restrictions.

46. The system according to claims 38, 39, 40 or 43, wherein said buyer may be compensated with a rejection compensation selected from the group comprising (i) a cash award, (ii) a prize, or (iii) a coupon or credit that may be redeemed for a discount against a future sale.

47. The system according to claims 38, 39, 40 or 43, wherein said conditional purchase offer further includes a payment identifier for specifying an account from which funds may be paid.

48. The system according to claim 47, wherein said processor is further configured to use said payment identifier to pay a penalty if said buyer does not complete said sale.

49. The system according to claim 47, wherein said funds are paid from a general-purpose account.

50. The system according to claims 38, 39, 40 or 43, wherein said conditional purchase offer is a binding conditional purchase offer.

51. A system for compensating buyers who make conditional purchase offers, comprising:

means for receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition and a variable condition;

means for processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller; and

means for compensating said buyer if said conditional purchase offer is not accepted by a seller.

52. A system for compensating buyers who make conditional purchase offers, comprising:

means for receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

means for processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;

means for preventing said buyer from identifying an acceptable seller price; and

means for compensating said buyer if said conditional purchase offer is not accepted by a seller.

53. The system according to claim 52, wherein said means for preventing said buyer from identifying said acceptable seller price comprises means for requiring said buyer to submit a binding conditional purchase offer.

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54. The system according to claim 52, wherein said means for preventing said buyer from identifying said acceptable seller price comprises means for preventing said buyer from submitting multiple conditional purchase offers.

55. A system for compensating buyers who make conditional purchase offers, comprising:

means for receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

means for processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;

means for compensating said buyer if said conditional purchase offer is not accepted by a seller; and

means for maintaining the anonymity of said seller until said conditional purchase offer is accepted.

56. The system according to claims 51, 52, or 55, wherein said means for processing said conditional purchase offer comprises means for providing said conditional purchase offer to a plurality of potential sellers of said product.

57. The system according to claims 51, 52 or 55, wherein said means for processing said conditional purchase offer comprises means for identifying one or more rules from a plurality of potential sellers, each of said rules containing one or more seller-defined restrictions.

58. The system according to claims 51, 52 or 55, wherein said buyer may be compensated with a rejection compensation selected from the group comprising (i) a cash award, (ii) a prize, or (iii) a coupon or credit that may be redeemed for a discount against a future sale.

59. The system according to claims 51, 52 or 55, wherein said conditional purchase offer further includes a payment identifier for specifying an account from which funds may be paid.

60. The system according to claims 51, 52 or 55 wherein said conditional purchase offer is a binding conditional purchase offer.

61. A system for compensating buyers who make conditional purchase offers, comprising:

means for receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

means for processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller; and

means for compensating said buyer if an unaccepted conditional purchase offer meets predefined criteria; wherein said predefined criteria includes a minimum offer price.

62. A system for compensating buyers who make conditional purchase offers, comprising:

means for receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition and a variable condition;

means for processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller; and

means for compensating said buyer if an unaccepted conditional purchase offer meets predefined criteria.

63. A system for compensating buyers who make conditional purchase offers, comprising:

means for receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

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means for processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;

means for compensating said buyer if an unaccepted conditional purchase offer meets predefined criteria; and

means for preventing said buyer from identifying an acceptable seller price.

64. A system for compensating buyers who make conditional purchase offers, comprising:

means for receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

means for processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;

means for compensating said buyer if an unaccepted conditional purchase offer meets predefined criteria; and

means for maintaining the anonymity of said seller until said conditional purchase offer is accepted.

65. A computer device comprising:

a computer readable medium having computer readable program means embodied therein, said computer readable program means for:

receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition and a variable condition;

processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller; and

compensating said buyer if said conditional purchase offer is not accepted by a seller.

66. A computer device comprising:

a computer readable medium having computer readable program means embodied therein, said computer readable program means for:

receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;

preventing said buyer from identifying an acceptable seller price; and

compensating said buyer if said conditional purchase offer is not accepted by a seller.

67. A computer device comprising:

a computer readable medium having computer readable program means embodied therein, said computer readable program means for:

receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;

compensating said buyer if said conditional purchase offer is not accepted by a seller; and

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maintaining the anonymity of said seller until said conditional purchase offer is accepted.

68. A computer device comprising:

a computer readable medium having computer readable program means embodied therein, said computer readable program means for:

receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller; and

compensating said buyer if an unaccepted conditional purchase offer meets predefined criteria;

wherein said predefined criteria includes a minimum offer price.

69. A computer device comprising:

a computer readable medium having computer readable program means embodied therein, said computer readable program means for:

receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition and a variable condition;

processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller; and

compensating said buyer if an unaccepted conditional purchase offer meets predefined criteria.

70. A computer device comprising:

a computer readable medium having computer readable program means embodied therein, said computer readable program means for:

receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;

compensating said buyer if an unaccepted conditional purchase offer meets predefined criteria; and

preventing said buyer from identifying an acceptable seller price.

71. A computer device comprising:

a computer readable medium having computer readable program means embodied therein, said computer readable program means for:

receiving a conditional purchase offer from a buyer for a product, said conditional purchase offer containing at least one buyer-defined condition;

processing said conditional purchase offer to determine if said conditional purchase offer is accepted by a seller;

compensating said buyer if an unaccepted conditional purchase offer meets predefined criteria; and

maintaining the anonymity of said seller until said conditional purchase offer is accepted.

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